1916

[illegible]
[illegible] Bryan

F614.2s
H4

Compliments of

Joseph Y. Porter

State Health Officer of Florida

Publication 172. March, 1917

STATE BOARD OF HEALTH OF FLORIDA

TWENTY-EIGHTH
ANNUAL REPORT
OF THE
State Board of Health of Florida
1916

APPROVED BY THE BOARD IN ANNUAL SESSION
FEBRUARY 13, 1917

JACKSONVILLE, FLORIDA

THE DREW PRESS
Jacksonville, Fla.
1917

FLORIDA STATE BOARD OF HEALTH

MEMBERS

HON. FRANK J. FEARNSIDE, *President* . . . . . Palatka, Fla.
HON. C. G. MEMMINGER . . . . Lakeland, Fla.
HON. S. R. MALLORY KENNEDY, M. D. . . . . Pensacola, Fla.

JOSEPH Y. PORTER, M. D.
Secretary and State Health Officer

OFFICE OF THE SECRETARY AND MAIN LABORATORY
State Board of Health Building
Springfield Boulevard
Jacksonville

BRANCH OFFICES
ASSISTANTS TO THE STATE HEALTH OFFICER

Tampa Key West St. Augustine Tallahassee Plant City
Pensacola Live Oak Ocala

AGENTS
Miami Fernandina Palatka

BRANCH LABORATORIES
Tampa Pensacola Key West
Miami Tallahassee

TABLE OF CONTENTS

President's Letter of Transmittal.............................. 1
Report of Dr. Joseph Y. Porter, State Health Officer............ 5
  Introduction 6
  Malaria in the Western Section of the State................ 7
  Public Health Survey of Florida........................... 8
  Card Index System of Tabulating Expenses................ 9
  Division into Bureaus.................................... 9
  Comment on Progress of the Work of the Several Bureaus 9
  Progress Along Educational Lines........................ 10
  Educational Health Exhibit Train........................ 10
  Referring to Courtesy of Railroad in Hauling These Cars Free 11
  Low Cost of Operation of Cars........................... 11
  Former Method of Handling Exhibit....................... 12
  Comparing Cost and Efficiency of Service................ 12
  Health Notes and the Weekly Press Service............... 13
  Bureau of Communicable Diseases......................... 14
  Laboratory Work... 14
  Referring to Wassermann Tests Being Done in Two Laboratories 14
  Comments on Positive Results in Wassermann Examinations 15
  Comments on Medical Inspection of School Children........ 16
  Need of Change in the Present Law....................... 16
  Letter of Dr. Forest of California Referring to Medical Inspection of School Children......................... 17
  Isolation Hospitals in Dade, Duval, Escambia and Hillsborough Counties 18
  Letter of State Health Officer to County Commissioners..... 19
  Action Taken By County Commissioners of Dade and Duval Relative to Isolation Hospitals....................... 19
  Bureau of Vital Statistics................................ 20
  Bureau of Sanitary Engineering........................... 20
  Water and Chemical Work of Laboratory Put Under Supervision of Sanitary Engineer...................... 21
  Bureau of Veterinary Medicine........................... 21
  Concerning Expenses of Various Bureaus and Departments and Salaries of Employees............................ 21
  Expense of Office and Work at Time of Organization of Board 22
  Increased Scope of Work.................................. 23
  Concerning Shortage of Funds End of 1916................. 24
  Expense of Vital Statistics Bureau........................ 24
  Additional Expense in Employment of District Nurses....... 25
  Additional Expenses of Bureau of Sanitary Engineer........ 25
  Payment Made for Health Exhibit Train................... 25
  Exhausted Funds in the Treasury......................... 25
  Arrangements Made With The Lewis State Bank for Payment of Vouchers at a 2% Discount......................... 25
  Referring to the Powers of the Board for Enforcing Regulations 26

Reports of the Assistants to the State Health Officer of the State Board of Health:

Report of Dr. C. H. Dobbs, Office of the State Health Officer 31
  Relative to Recommendations of Dr. Fox.................. 32
  Relative to Rule Requiring Report of Communicable Diseases 33
  No Serious Outbreaks of Communicable Disease............ 33
  Relative to Precautions Taken to Guard Against Introduction of Infantile Paralysis............................ 33

  Decrease in Smallpox 34
  Isolation Hospitals 35
  Distribution of Anti-typhoid Vaccine 36
  Prevalence of Rabies 36
Distribution of Biological Products 37
  Concerning Prevention and Eradication of Hookworm Disease 38
  Plan of Treatment of Hookworm Disease 38
  New Plan of Studying the Effect of Hookworm Disease 39
  Changes in Personnel of Assistants to the State Health Officer 39
  Reorganization of Districts 39
  Duties of Assistants to State Health Officer 40
  Special Details in the Districts 41
  District Public Health Nurses 42
  Qualifications for Appointment 42
  Changes in Personnel of District Public Health Nurses 43
  Extension of Scope of Work 43
  Anti-Tuberculosis Work, January 1st to June 30th, 1916 45
  Anti-Tuberculosis Work, July 1st, to December 31st, 1916 46
  County Agents and Sanitary Patrolmen 47
  Diagnostic Laboratories 47
  Changes in Personnel of Diagnostic Laboratories 47
  Number of Examinations 48
  Wassermann Test Included in Routine Work 48
  Relative to Subsequent History of Syphilitics After Wassermann Test 49
  Examinations Performed in the Several Laboratories of the State Board of Health During 1916 (by Months) 50
  Specimens Examined in All State Board of Health Laboratories During 1916 (By Months and Diseases) 50
  Distribution of Communicable Diseases as Diagnosed by the Laboratories of the State Board of Health for the Year 1916 51
  Treatment of Indigent Crippled Children 59
  Medical Inspection of School Children 59
  School Inspection Tabulation, preceding page 62
  Conclusion 62
Report of Dr. Chas. W. Bartlett, Assistant to the State Health Officer, West Coast District 63
  Inspections by Sanitary Patrolman, Tampa, for the Year Ended December 31st, 1916 66
Report of Dr. C. W. D'Alemberte, Assistant to the State Health Officer, Western District 67
Report of Dr. J. Y. Porter, Jr., Assistant to the State Health Officer, South East Coast District 70
Report of Dr. C. T. Young, Assistant to the State Health Officer, South Central District 75
  The Need for Proper Supervision of Health of School Children 75
  Defective Teeth 76
  Children Should Be Taught the Use of the Toothbrush 76
  Procedure Pursued by Mrs. Stevens of Ocala 76
  Eye Tests 76
  Trachoma 77
  Relative to Checking Up the Work 77
  School Sanitation 77
  Illumination 77
  Improper Ventilation 78
  Common Drinking Cups, Common Towel 78
  Municipal Sanitation 78

  Referring to Specific Cases of Municipal Improvement in Sanitation 79
  Investigation of Prevalence of Dysentery in Lakeland 79
  Prevalence 80
  Etiology 80
  Carrier Cases 81
  Method of Infection 81
  Epidemiology 82
  Sewage Disposal 84
  Referring to Construction of Reservoirs 85
  Suggestions for Improvement of Ice 85
  Milk 86
  Referring to Condition of Dairies 86
  Food Supplies 86
  Increased Dysentery Due to Fly Transmission 86
  Recommendations 87
  Letter from City Health Officer of Lakeland 87
  Screening Done 88
  Dairy Improvements 88
Report of Dr. W. P. Crigler, Assistant to the State Health Officer, Central District 89
Report of Dr. J. E. Taylor, Assistant to the State Health Officer, North Central District 92
  Outline of Year's Work 92
  School Work 97
  Monthly Inspection Tours 99
  Trachoma 100
  Contagious Diseases 100
Report of Dr. M. E. Heck, Assistant to the State Health Officer, North East Coast District 101
  Regular Inspection Trips Through My District 102
  Special Inspection Trips Through My District 102
  Educational Work 103
  Correspondence 104
  Miscellaneous Public Health Work 104
  Conclusion 105
Report of Dr. E. M. Brevard, Assistant to the State Health Officer, West Central District 107
Report of Dr. J. Knox Simpson, Acting Assistant to the State Health Officer, in Charge of Orthopedic Work 110
  Report of Orthopedic Work, State Board of Health During Year 1916, (Statement) 113

Bacteriological Laboratories:

Report of Dr. E. G. Birge, Bacteriologist, Jacksonville Laboratory 115
  Statement of Specimens Examined In the Central Laboratory, Jacksonville, Florida, 1916 117
Report of Dr. H. R. Mills, Bacteriologist, Tampa Laboratory 121
  Statement of Specimens Examined in the Tampa Laboratory, During 1916 124
Report of Dr. F. A. Brink, Bacteriologist, of the Pensacola Laboratory 127
  Statement of Specimens Examined in the Pensacola Laboratory During 1916 128
Report of Dr. Iva C. Youmans, Bacteriologist, Miami Laboratory 131
  Statement of Specimens Examined in the Miami Laboratory During 1916 133

Report of Dr. Harold H. Fox, Bacteriologist of the Tallahassee Laboratory 135
Statement of Specimens Examined in the Tallahassee Laboratory During 1916..... 139
Reports of the District Public Health Nurses:
Report of Miss Eula Lee Paschall, Pensacola, Florida..... 141
Report of Miss Harriett J. Sherman, of Tampa, Florida..... 141
Report of Mrs. Mary H. Spencer, Gainesville, Florida..... 142
Report of Mrs. Susan Voorhees, Jacksonville, Florida..... 145
Report of Mrs. Lydia L. Kirk, Tallahassee, Florida..... 146
Report of Miss Irene R. Foote, Daytona, Florida..... 147
Report of Mrs. Mary E. Roach, Miami, Florida..... 150
Report of Mrs. F. A. Scott, Lake City, Florida..... 152
Report of Miss Margaret L. Bennett, Marianna, Florida..... 154
Report of Mrs. Rhea H. Lee, Lakeland, Florida..... 154
Report of Miss Jessie Wheeler, Sanford, Florida..... 155
Report of Lottie Culp Gantt, Jacksonville, Florida..... 158
Report of Mr. George W. Simons, Jr., Chief Bureau of Engineering 162
Introduction 162
Detailed Plan of Beginning Work..... 162
Status of Sewage and Sewage Disposal..... 163
Questionnaire 164
Sewerage 165
Cities and Towns with Sanitary Sewerage Systems Installed 165
Relative to Growth of Florida Towns..... 168
Sewage Disposal 172
Imhoff Tanks 172
Sewage Disposal Plant Operation..... 173
Sewage and Drainage Well Practices..... 175
Conclusion 177
Activated Sludge..... 178
Water Supplies..... 179
Municipal Water Supplies Derived from Underground Sources 180
Taste and Odor..... 181
Softening of Water..... 182
Water Consumption..... 183
Water Supply of Florida Municipalities (Statement)..... 184
Areas of Artesian Flow in Florida (Map)..... 185
Referring to Treatment Plants..... 190
Liquid Chlorine Apparatus..... 190
Springs 191
Water and Sewage Laboratory..... 191
Studies of Water and Sewage to be Carried on by This Laboratory..... 191
Collection of Samples of Water for Examination..... 192
The Significance of a Bacterial Examination of Water..... 192
Miscellaneous 193
Residential Sewage Disposal..... 194
Designs for Plants..... 194
Privies 194
School Hygiene..... 194
Collection and Disposal of Garbage..... 195
Sanitary Abattoirs..... 195
State Plumbing Code..... 196
Recommendations 197
Report of the Bureau of Vital Statistics..... 201
Report of Dr. F. L. Watkins, Statistician..... 202
Establishment of Primary Districts..... 203

Appointment of Local Registrars..... 205
Printed Matter..... 206
Recommendations 206
Mortality 207
The Number of Deaths and Death Rates per 100,000 population for Municipalities Reporting Deaths for the Years 1915 and 1916..... 208
All Causes 209
Typhoid Fever..... 209
Malaria 209
Smallpox 210
Measles 210
Scarlet Fever..... 210
Whooping Cough 210
Diphtheria 210
Influenza 211
Pellagra 211
Tuberculosis 211
Syphilis 212
Cancer 212
Pneumonia 212
Diarrhoea and Enteritis..... 213
Puerperal State..... 213
Suicides 213
Homicides 213
Report of the Bureau of Veterinary Science..... 215
Report of Dr. Chas. F. Dawson, Chief, Bureau of Veterinary Science 216
Organization of the Bureau of Veterinary Science..... 216
State Veterinary Inspectors..... 216
County Farm Demonstration Agents Salaries Paid by Federal Government, Giving Free Service in Administration of Hog Cholera Serum..... 217
Hog Cholera..... 218
Hog Cholera Serum (Statistics)..... 219
Tick Eradication 220
Dipping Vats 221
Self-Boiled Cattle Dip..... 224
Caution 225
How to Determine the Capacity of a Vat..... 225
How to Test Arsenical Dip..... 226
Plan for a Concrete Vat for Dipping Cattle on the Range..... 227
Plan or Cut for a Concrete Vat for Dipping Cattle on Range 228
Bill of Materials for Concrete Vat..... 229
To Render Harmless the Arsenic in the Dipping Solution Before Emptying the Vat for Cleaning..... 229
Waterproofing 230
Eradication of Ticks by Pasture Rotation Method..... 230
Glanders 232
Cases of Glanders During the Year 1916..... 234
Anthrax 234
Some Diseases Hitherto Not Known to Exist in Florida..... 235
Tapeworm Disease in the Liver of Swine..... 235
Enzootic Pneumonia in Young Pigs..... 236
Takosis in Goats..... 236
Stomach Round Worms in Sheep..... 237
Demodectic Mange in Swine..... 240
Publications 240

Movements of Certified Animals Into and Out of the State in 1916 241
Florida Live Stock Estimates for Seven Past Years 241
Reports of the Assistant Veterinarians:
Report of Dr. W. A. Munsell, Green Cove Springs, Florida 243
Investigation and Work on Hog Disease 243
Investigation and Work on Horse Disease 243
Report of Dr. J. W. DeMilly, Tallahassee, Florida 246

ILLUSTRATIONS

Tuberculosis Specimen Examination Chart 56
Diphtheria Specimen Examination Chart 56
Typhoid Specimen Examination Chart 57
Malaria Specimen Examination Chart 57
Gonorrhoea Specimen Examination Chart 58
Animal Parasites Specimen Examination Chart 58
Crippled Children, following page 114
Sewerage Installations According to Population 167
Sewerage Construction in 51 Reported Cities and Towns of Florida 171
Areas of Artesian Flow in Florida (Map) 185
Plan of Vat, Concrete, for Dipping Cattle on Range 228
Chart, Cleaning Cattle and Soil by Pasture Rotation 233

LETTER OF TRANSMISSAL

PALATKA, FLA., February 1st, 1917.

Hon. Sidney J. Catts,
Governor of Florida,
Tallahassee, Fla.

DEAR SIR:

I am pleased to transmit herewith the twenty-eighth annual report of the State Health Officer covering the work of the State Board of Health in its various branches, during the year 1916. You will find in that report an exhaustive summary of the accomplishments of the Board and its aims for the future prosecution of its work, while the detailed discussion of its activities during 1916 will be found in the reports of the Chiefs of the various Bureaus and Divisions.

During February of the past year, Dr. Carroll Fox, who was detailed by the Surgeon-General of the United States Public Health Service at the request of the State Health Officer for a survey of public health administration in Florida, finished his study of the work in this State and certain recommendations which he made for the reorganization, extension and improvement of the Board's methods were approved and adopted by the Board. These changes, none of which were of a radical nature, were effected during the early spring of 1916. A complete and detailed discussion of this reorganization will be found in the report of the State Health Officer. The efforts of the Board have been almost uniformly successful and its present policies should, I believe, be continued.

I wish to submit, however, for your consideration several recommendations and to call to your special attention certain changes which would, in my opinion, increase the efficiency of the organization. It seems that the Board would be able to better serve the public, if it were relieved of certain obligations which the legislature has from time to time imposed upon it, probably under the belief that the funds of the Board were sufficient to carry on these additional lines of endeavor without extra appropriation or possibly because of the efficiency displayed by the Board in the management of other matters. I believe that the efforts of the State Board of Health should be confined to the protection and conservation of human life and health and that this was the original object for which the Board was established. There is enough work along this line alone with its lateral phases to consume the funds and the energies of the Board. I would therefore recommend the separation of the Veterinary work and its inauguration either under the Department of Agriculture or under the supervision and control of a live stock sanitary commission with special appropriation for that object, provided by the legislature. This work has consumed during the past few years approximately one-fifth to one-quarter of the entire revenue of the State Board of Health, and has in this way, seriously hampered the Board in other more important lines of endeavor more closely allied with its original purpose.

The care of indigent crippled children of the State, which duty was placed upon the Board by the Legislature of 1909, in so much as it is a work which deals with the health and productiveness of the individual rather than with the health and welfare of the community and State, seems to be more or less foreign to the purposes of a public health organization, and I would therefore recommend that the legislature seriously consider the establishment of a State Bureau of Charities and Corrections under whose supervision this work, together with the reform schools, the schools for the deaf, dumb and blind, the State Hospital for the Insane, and possibly the convict system would properly be placed.

The defects of the present school inspection law have been discussed at length in former reports and I would earnestly recommend that the present law be so amended as to give the State Board of Health full supervision over this work, and of the appointment of inspectors, without the hampering provisions and restrictions which the present law contains, and which necessitate needlessly large expenditures for mediocre services rendered under unsatisfactory conditions. By such amendments this work may be carried out effectively and at reduced expense. An alternative plan might be suggested whereby this inspection service would be placed under the supervision of the Department of Public Instruction. An outline of an effective, and at the same time, economical plan for the prosecution of this work is set forth in the report of the State Health Officer.

The changes I have outlined herewith, if adopted, will relieve the financial burden and will greatly increase the scope and the efficiency of the work for the conservation of human health along lines strictly in accord with the purpose and intent of our legislators when in their wisdom they established the State Board of Health and provided a tax for its maintenance.

I feel that it is proper that I should mention the temporary shortage of funds which occurred during the past year, and offer to you an explanation as to the cause of this financial stringency. This deficiency was not in any way chargeable to the Executive Officer of the Board but occurred as a result of a misunderstanding as to the amount which would be provided for the work during the year. The stringency of the times led many of the taxpayers to exercise their legal priviledge of bi-annual, rather than annual payment of taxes. An unusually large proportion of the taxes in 1916 were received during December, thus causing the funds on hand during October and November to fall far below the expected figure.

It was therefore impossible during those months to meet many of the financial obligations, thus causing considerable inconvenience, both to the employees of the Board, and to others whose accounts were not settled promptly, though this inconvenience was only temporary and was largely overcome when the delayed tax returns, were received during December.

The entire report which follows merits your careful attention and consideration, giving as it does a clear insight as to the magnitude and importance of the work of the State Board of Health and the degree of success which has been attained under the efficient direction and supervision of the State Health Officer.

Very respectfully,

F. J. FEARNSIDE,

President State Board of Health.

EXECUTIVE DEPARTMENT

REPORT OF THE STATE HEALTH OFFICER

DR. JOSEPH Y. PORTER

DECEMBER 31, 1916

REPORT OF THE STATE HEALTH OFFICER

JACKSONVILLE, FLA., December 31, 1916.

HON. FRANK J. FEARNSIDE,
President, State Board of Health,
Palatka, Fla.

DEAR SIR:

In order that you may have useful data which will enable you to prepare your report to the Governor of the State on the work of the State Board of Health for the past year, as the statutes require, I take pleasure in transmitting an account somewhat in detail, of the activities of the Executive Office of the State Board of Health for the year 1916.

Introduction

It is gratifying to say to the people of Florida that with the exception of a few instances, the general health of the State for the year, has been excellent but until the people accept and adopt measures (which will serve as constant reminders) to guard the individual and community from disease agencies, the Utopian expectations of absolute health and freedom from sickness in all of its divarications can hardly be expected. A retrospect, however, of a quarter of a century brings forth a pleasing as well as grateful assurance that the efforts of the State Board of Health towards a betterment of conditions affecting the welfare of the people of Florida, have been not unavailing for good.

For at least a quarter of a century and perhaps longer, Florida has not maintained a special immigration Bureau, other than a subdivision in the Agricultural Department, although such methods for inducing settlers to the state have been frequently urged through the press and in the legislature. However the lack of providing an organization of this kind has perhaps been supplied advantageously and without additional cost to the taxpayers, by the State Board of Health, in the confidence which the methods of the Board have inspired not only with home people, but through correspondence has given and disseminated a knowledge of healthful conditions existing in Florida at all seasons of the year. It may be said, therefore, that the State Board of Health of Florida has had, and has exercised a dual duty. The Board has not only been a guardian of the lives and health of the people of the State, but has been

an inviting factor to citizens of other states to make their homes where health abounds in lavish plenty, where there is so little variation of temperature both in the winter and summer, and furthermore where the soil produces successful crops through the entire year, with so little expenditure of labor. These convincing facts were apparent last summer when excursion parties composed of citizens of other states came to Florida to learn for themselves of actual conditions of health and climate which had been stated to exist during the summer months. Except for pleasure and recreation the citizens of Florida, that is to say, the natives, those who have lived here constantly, no longer leave the state during the summer for the improvement of their health.

Preventable sickness has been lessened each year and a very marked improvement in domestic and civic hygiene has been noticeable not only to those engaged in the work but also to the observing general public.

Malaria in the Western Section of the State

The severe storms of the western gulf coast during July and August of last year caused the streams of that section to rise and overflow their banks, thus flooding a large area of the surrounding country. This wide-spreading water to some depth and remaining for weeks was followed by an epidemic of malaria fever in certain sections of western Florida, causing not only a few deaths but an economic loss of great magnitude by an interference of business on account of much sickness from that cause.

Although the lessons learned by absence of house screening was a dear and sad one in several instances, yet the cause of malaria and its prevention was brought most forcibly to the minds of the people in those inundated sections and the object lesson of protecting themselves against the host carriers of this disease, the Anopheles mosquitoes, was emphasized most potently.

It required several weeks for the waste of waters to flow off, and dry up, and then as the breeding places for these insects diminished the occurrence of fever became less frequent and finally the status of health in this locality was restored to its usual normal condition. A hygienic incident of some sadness, it is true, but carrying however a rebuke for indifference to sanitary instruction.

Public Health Survey of Florida

It will be remembered that immediately after the session of the legislature of 1915 during which methods of the State Board of Health were unfavorably criticised by a member of the Lower House, that the Surgeon-General of the United States Public Health Service was requested by the Executive Officer to detail an official of his corps to make a "survey" or an examination into the activities of the State Board of Health of Florida, its methods and management and this request was made because of a desire on the part of the State Health Officer to have the system of his administration which he in great part was responsible for, looked over and criticised by an entirely disinterested person, who at the same time is well versed in what should be the necessary administrative work of a state health department. In the last annual report mention was made of this fact together with information that Dr. Carroll Fox, Surgeon of the U. S. Public Health Service, was at the time the Annual Report for 1915 was in preparation actively engaged in the study for which request had been made. Dr. Fox completed his report the latter part of February, but it was not published nor given to the State Board of Health until several months later. A printed copy of this report is attached to this narrative, and affords most interesting and instructive reading to any one who is especially attracted to the subjects of sanitation and health, and the administration of both by organizations.

Some of the recommendations of Dr. Fox had already been in operation by the Board and therefore needed no modification nor reconstruction. Other recommendations somewhat expanded in their suggestion, but entirely practical for application, were submitted by correspondence to the members of the State Board of Health for their opinion as to the advisability of adopting in to-to the recommendations made, or accepting them only in part.

After correspondence in which only answers of a tentative approval were given by the members of the Board, you will remember, that in one of my visits to Palatka to consult with you on office matters, you instructed that the recommendations embodied in Dr. Fox's report, entitled "Health Administration in Florida," should be placed in operation with a view of ascertaining whether they were applicable to the necessities of Florida or not. In other words, it was suggested by you that a "try-out" might be made and if Dr. Fox's recommendations were found to be practical in application and operation, then to be accepted and adopted and to form a part of the methods of administration of the health department of the state.

Card Index System of Tabulating Expenses

This instruction has been carried out and it is a pleasure to state that so far there has been no reason to change the order and method as suggested in the survey, but in the management of the monetary methods of the Board a decided improvement has been affected in the tabulation of expenses and expenditures by the system of card index in recording receipts and disbursements which was gone very thoroughly into during the study made by Dr. Fox. It is now possible, at any time to turn to this index of the Executive Office of the Board and see what different purchased items have cost, for what purpose bought and the total expenditures and cost of management of each division of the State Board's operation.

Yourself and colleagues will be better enabled to appreciate what I have said in this report by examining the financial statement of the Board for the past year and comparing with previous statements of other years; but it is not intended by this statement that the idea should be had that there is any greater economy practiced now than in the past, because economy with efficiency has been the constant signet of the Board, but merely that a more ready method of ascertaining expenditures and the class and character of items which are bought, is now being carried out.

Division into Bureaus

Adopting and following out the system suggested, the operative methods of the Executive Office have been divided into Bureaus each with a Bureau Chief, but all under active and immediate supervision of the Executive Office of the Board. These Bureaus of work are known as:

Bureau of Communicable Diseases; Bureau of Vital Statistics, Bureau of Public Health Education, Bureau of Public Health Engineering, Veterinary Bureau and Clerical Bureau.

Comment on Progress of the Work of the Several Bureaus

There has been a notable progress made in the extent of work done in each Bureau during the past year. Probably the greatest advance which has been planned and placed in practical operation has been that along educational lines. It can be said without any undue boast or immoderate brag, that the

Progress Along Educational Lines

Educational Health Exhibit Train has been the crowning feature of the health administration of the past four years and to which the present personnel of the State Board of Health by sanctioning the recommendation made for the establishment of this method of educating the people is entirely due the credit and of which they may be justly proud.

Educational Health Exhibit Train

When it is carefully considered that the functions of the State Board of Health are purely advisory and counselling except in rare instances of extended epidemics—those giving any thought to the subject of authority which the Board may exercise, cannot fail, after examining the law to learn that the State Board of Health of Florida possesses no judicial nor police powers, and that whatsoever of good it has accomplished and may hope in the future to fulfill must be altogether along lines of pacific pleading, earnest solicitation and convincing argument. Therefore the educational feature of administration and management plays a highly important part in disseminating information and placing directly before the eyes of the public, especially in the rural portions of the State, which do not come intimately in touch with progressive centers, ascertained principles of sanitation which have been worked out beyond any attempt of successful dispute. The Educational Health Exhibit Train affords the means of bringing the subjects which the State Board of Health believes to be of prime importance to the welfare of the people of Florida in their health and subsequent happiness to the people in their homes and along the lines of rail communication. To read or to listen attentively is possibly to be later on convinced, but to see is to have the object lesson ineffaceably photographed on the brain, to be there retained, and provide food for thought and reflections long after the picture or text or model shall have departed from view. A moving school of instruction is not a new idea or departure in teaching, but when confined solely and entirely to the health problem represents a striking effort towards the sole object of improving the human health, unmingled with the products of the soil or of the stock farm. Such a moving school of sanitation the State Board of Health has with the sanction and approval of the Legislature and the generosity of the railroad companies of the State provided and hopes through this means to impress the people of the State with useful lessons of not only how to live healthily and therefore happily but also how to live long and monetarily profitably.

The evidence is not lacking of the fruitful benefit resulting from the visit of these cars equipped with an exhibit purely educational in character of a sanitary and hygienic nature, in texts and models, to points in the state. This is clearly shown by requests from the people of sections where these cars have been asking for literature giving additional information on disease prevention and improved manner of keeping in health, as pointed out by the "exhibit." This statement is borne out from the distribution during the year, of thousands of pamphlets mailed from the office of the Board as well as from the educational health exhibit train in its movement to and fro through the state.

Referring to Courtesy of Railroads in Hauling These Cars Free

Low Cost of Operation of Cars

A description of this train was given in the last annual report and need not be again repeated. But that which probably concerns the taxpayers of the State as much as the benefit gained, is the cost of operating this movable school. It will be again recalled to mind that the railroad companies of the State haul these cars free of any cost to the State Board of Health or to the State of Florida, not only giving free transportation for the cars, but for the necessary attendants, under an authority granted and permitted by the legislature of 1915. It should not be forgotten either that in addition to transporting these cars from point to point over the State, the railroads operating in Florida, look after the running equipment and any repairs which are required are done at nominal cost. It is indeed gratifying to state that this service has always been most courteously and generously given whenever asked for. Grateful acknowledgment of kindly attentions is hereby expressed. It should not be forgotten that the officials in charge of the school train are subject to assignment to other duties and therefore their salaries should not be charged solely to the operation of these cars, because when the cars are not in use and they cannot be during the extreme heat of the summer months, these employees of the Board are assigned to other duties and are therefore continuously in service, and actively engaged in other fields of sanitary activity. Actually then, the cost of operation of the cars to the State Board of Health is narrowed down to the pay of domestics,—cooks and porters—and the food.

Former Method of Handling Educational Exhibit

Comparing Cost and Efficiency of Service

Previous to the sanction by the Legislature of the educational health exhibit train, the sanitary exhibits of the State Board of Health were taken by express and freight; the necessary attendants, to demonstrate the same, traveling by ordinary passenger train. Comparing the cost of this service of former methods of demonstration with the later train service, especially owned and equipped by the State, it will be learned that the actual cost is less by half than that by the freight and express method with the additional benefit to the people in the latter method of giving by a far greater number of visits and to more places than when express and freight were relied upon for transferring the exhibit from point to point in the State. For instance, it was found that the greatest number of places that could be stopped at when the exhibit was carried by freight and express, were three towns in a month, when by the train service now in operation, 25 or 30 towns are paid a visit thus covering the State more rapidly, and more efficiently.

By this way of going to places again and again, the Executive Officer is able to determine whether the methods adopted in thus bringing the subject of disease prevention and health betterment directly to the doors of the people warrant the expenditure of energy and money that are being put forth in the work. The generous and enthusiastic welcome which the train has met with at almost every point visited (and a pause may be made here to say that at almost every stopping point on the schedule of train service the cars of the exhibit have been sidetracked for inspection) seems to well warrant the assertion that the efforts which are being used to improve the health of the citizens of the State are appreciated and approved of by them.

From time to time the various instructive text panels and models which illustrate certain sanitary requirements will be replaced and changed as they have served the purpose for which they were originally installed, and others which scientific progress has brought to light as effective in promoting health will be substituted. So too, in regard to the screen teaching which is given in smaller towns where there are no moving picture houses. A movable screen on a light frame some fifty feet or more from the car affords an excellent method of projecting useful instruction from a machine on the inside of the car. Entertaining and interesting teaching and information to an attentive audience has been possible; and that the instruction given is appreciated, has been also shown by the large audiences which have gathered even in inclement weather to see the pictures. In towns where a moving picture theater is operated, the films from the train are loaned. The managers of these theaters have been most courteous and generous in showing the films from the Health Train. In several instances, matinees devoted exclusively to health educational screen features have been offered the public without charge.

HEALTH NOTES and the Weekly Press Service

An important part of the educational propaganda which the Executive Office offers the people of Florida is the Health Notes and the weekly Press Service. It is learned from many sources that both of these bulletins are greatly prized by the people of the state especially by those in the rural districts. On one of the visits of the Health Train to a small settlement a lady told the Executive Officer of the Board, that she read the Health Notes with as much interest, as carefully and as assiduously, as she did her "Good Book," and that she welcomed its coming each month. Other expressions of approval of the efforts of the Board in the distribution of literature are heard again and again, which is decidedly pleasing as giving tangible evidence that the efforts of the Board toward bettering the health of the people of the state is valued.

The Health Notes is sent to anyone asking for it. There is no charge, and on the contrary the Executive Office feels complimented that an interest is being shown in the subject of preventive medicine by the request. It is thought best not to mail the little pamphlet except to those asking for it, as it has been found that when sent on the suggestion of a friend, who himself or herself, may be deeply concerned or interested in health betterment, yet oftentimes the "Notes" have either not been taken from the post office (according to the Postmaster) or else thrown on the floor of the post office building to be swept up by the janitor into the waste paper receptacle for the stove or furnace. The monthly issuing of the Health Notes costs the state about three cents a copy and while in single donation this is small yet when a waste is had of unused or discarded issues, the aggregate of wanton loss is a considerable item in the course of the twelve months. It is a pleasure always for the Executive Office to furnish information and to mail literature of various kinds dealing with divers subjects, but there must be an evident interest shown by a request, to insure or guarantee that a proper use will be made of the expenditure of funds which the state provides for this and kindred purposes.

Bureau of Communicable Diseases

In the rearrangement of the methods and work of the Executive Office, it will be noted that the laboratories and field force, medical men and instructors, were combined under the heading of a Bureau of Communicable Diseases and the tabulation of this work, with special reports give much useful and interesting information.

Laboratory Work

It may be instructive to note that with the adoption of the rearrangement of the work in the laboratories the number of specimens examined has but slightly decreased; in fact in the central laboratory it has increased, notwithstanding the explanatory fact that the water examinations are now assigned to the Bureau of Engineering and do not come within the scope of tabulated work of the laboratories and that the laboratory work in the central laboratory is accomplished with less assistance and at a decidedly less cost to the state than under former management.

Referring to Wassermann Tests Being Done in Two Laboratories

In connection with the work of the laboratories mention should be made of the free service given by the Board in the Wassermann test for syphilitic infection to those citizens of Florida who may apply for the same. Formerly each laboratory for bacteriological research offered this assistance to the physicians and others who applied. It has been found, however, that it is more economical and not less efficient to have the "Wassermanns" done at only two of the six laboratories—the Central and Tampa branch—and in following out this method, a considerable expense in rendering this service has been eliminated. By giving this service free there can be no doubt but that a conspicuous advance has been made in a possible protection against transmitting a specific disease to the great public of the state. This gift to the people however, should, if continued, be only offered when the applicant desirous of knowing his or her condition in relation to syphilitic infection will be willing to furnish through the attending physician a case record of treatment for file at the Executive Office of the Board that a study of results by instructive and profitable deductions may be reached through a "follow up" system.

Comments on Positive Results in Wassermann Examinations

Indeed the free diagnosis as brought out by the Wassermann test should be in the nature of a binding agreement on the part of the applicant with the State Board of Health, that if the test is positive the name of the individual may be sent to the Judges of the County Court of the several counties of Florida to be recorded; not for general public inspection, but by interested parties, such as parents, and if the applicant is an unmarried person, that no marriage license shall be issued to that individual until a certificate is produced from a reputable physician of cure and freedom from syphilitic infection. Probably some statutory legislation may be necessary to enact such a requirement and restriction on the marriage contract but it is certainly demanded when it is considered that unbridled sensuality entails so much misery upon countless thousands of innocent women who become wives under the belief that the man who is to love, protect and defend them from all harm, physical as well as sentimental, are as pure as they are, but who in a few short months are awakened to the realization that wifehood is but a synonym for untold suffering of endless duration unless a resort is made to operations of bodily dismemberment with probably destruction as a sequence, of that God-Given Gift, Maternity, so prized by all normal women. Not only should this safeguard of masculine purity be stretched about and around the marriage contract in determining a freedom from syphilitic infection but also to guard against a possibility of unconscious infection from uncured gonorrhoea.

What has been said on this subject may be thought to be a radical expression for needful legislation but if the State throws its sheltering arms around the honor and virtue of the women of Florida by punishing by the death penalty an assault even without violation of womanly purity, is the suggestion too extreme in a reform which is proposed to ask for an equal protection for those who some day will become wives, against a hideous monster "which walketh in darkness" and if unrestrained and unrestricted will cause pain and suffering to thousands of mothers and their innocent offspring?

Dr. D. T. Atkinson in his treatise entitled "Social Travesties and What They Cost" very clearly and instructively points out the risks which innocent girls take in mating without a guarantee of physical purity. This book is published by Vail-Ballou Company of New York and should be read by every parent in this country.

Comments on Medical Inspection of School Children

In the last annual report—that of 1915—the Medical School Inspection legislation which was passed by the Legislature of 1915 was extensively discussed. It was pointed out that this legislation was passed without consulting the State Board of Health, or being advised by the Board of the practicability of an enactment of this character without providing means of a financial character for the purpose. With the meager compensation which the Board offered and which it was all, within its monetary ability to pay, a certain amount of medical inspection of school children has been done during the past year. The character of the work as well as a tabulation by counties, where the inspection was undertaken, for not all counties have complied with the State Statutes on the subject, is shown in the report of the Chief of the Bureau of Communicable Diseases. There is need of a radical change in the present law to efficiently accomplish what is desired, for medical inspection of school children to ascertain defectives of whatsoever nature, whether of the acute communicable diseases, or from errors of refraction or loss of hearing—deafness—is essential to good scholarship and ability to profit by academic teaching. This however cannot be gained by the workings of the present law. If the next Legislature purports to let stand the present law, then adequate compensation should be provided for the doctors who are to do this work. If on the other hand, the law is to be amended, and I think that this latter procedure is preferable, then a law framed somewhat after the suggestion of Dr. Foster of California, will obtain as good results especially as the State does not propose, and it would be utterly impossible for the State to do so, to correct the defects found among the school children of the State. The following letter received from Dr. Foster, who was at one time the Secretary of the State Board of Health of California, and who is an able sanitarian, explains a method which will produce excellent results and at less cost to the State of Florida.

Need of Change in the Present Law

Letter of Dr. Foster of California Referring to Medical School Inspection

BOARD OF EDUCATION

Oakland, California, Oct. 16, 1915.

My Dear Doctor Porter:

I wonder if you will excuse me for "butting in" on you. Since I left the California State Board of Health, I have been in Oakland as Director of Health Development in the schools. I see in "Health Notes," which I always read and enjoy, that you have a new law requiring medical inspection of school children. I thoroughly believe in the work but there is a right and wrong way to do it. The question of who should supervise the work, health or school authorities, is of less importance than the question of doing it right. You certainly have a problem on your hands, and while admitting your ability, I don't believe, under your law, it will be solved to your satisfaction. I haven't a copy of your law but judge that it requires the examination shall be done by a physician. This I believe is a mistake, for six years' experience convinces me that nurses, well trained and supervised, will do the work as well or better. It isn't to make a fine diagnosis you are after. You are not going to treat the case, and the doctor who does will go into the finer points. Your question is, "Has this child defective vision, hearing or what not." A nurse can find that out as well as a doctor. Many doctors who have the time to give to this work, are making for practice, and unless your people are different from most that I meet, they (the doctors) will be accused of trying to get patients. This is not so with the nurse. Besides she is patient, persistent and gets nearer to the child and mother. To make the work worth while you simply have to follow it up to the house: A notice will have but little effect. The nurse will do this better than the doctor.

I do not know how *elastic* your law is, but if I were to begin such work and could do as I know is best, it would be about as follows:

Have a trained nurse for every 3,000 to 6,000 children according to local conditions. She should be under the supervision of some reliable physician who need not have many duties; simply be behind the nurse to counsel and back her up if need be. Not all children need a careful examination, and after they have been once examined and recorded, a very little time will be enough. *My* nurses examine 40 to 50 per day, and under stress up to 80. Of course this latter number only in schools that they have worked before; and where charts are made out. After school hours the notice to parents can be made out; or this can be delegated to some bright pupil, and the nurse use the time visiting homes.

I enclose a sample of our examination blank and notice to parents. This letter we always seal and send home by child.

I hope, my dear Doctor, you will excuse me for writing as I have, but I fully appreciate your difficulties and thought possibly a knowledge of what others were doing might help. I have faith in your ability to work out a successful department and shall watch "Notes" with interest.

With kindest regards,

(Signed) N. K. FOSTER, M. D.

An intelligent and competent woman entering a schoolroom can almost at a glance note the posture of the children in studying, or writing, and can gather a very fair idea even without questioning the child of any error or defect of vision, and this acute perception can also detect other abnormalities of physique.

If, as has been said, the State does not propose to correct by treatment any of the defects found, the visiting inspector—woman—can just as well notify the parent or guardian of what is needed and advise consulting a specialist in the line of the defect suspicioned as can a medical man. In the "follow-up" method of visiting the homes of the children to see whether the advice proffered in the notification card, has been accepted and heeded, the woman inspector has an additional advantage of finding out hygienic conditions of the home, which the doctor cannot have because of want of time to visit individual families, and besides of a natural distaste a physician has to "push" himself into private homes unasked. An addition of ten more women instructors to the present force of sanitary instructors of the State Board of Health could, under the district health officer fulfill all necessary requirements. Whether the new law or the amended law is placed under the supervision of the State Board of Health or under the Department of Public Instruction of the State it is confidently believed that a system framed in accord with suggestions above stated, will accomplish all that may be desired to practically correct any physical defects in the school children of Florida and at the same time such methods will cost less to the State and effect more.

Isolation Hospitals in Dade, Duval, Escambia and Hillsborough Counties

At the last annual meeting of the State Board of Health at Pensacola, the Executive Officer was instructed to communicate with the County Commissioners of Duval, Escambia, Hillsborough and Dade Counties to ascertain the terms under which Isolation Hospitals of the Board located in those counties would be taken over by the county authorities, and thus relieve the Board from further operating these institutions. The following letter was written and after some correspondence, both by mail and telephone, the County Commissioners of Duval and Dade counties consented to have the property which had been deeded to the State at previous times, for the specific purpose of isolation hospitals, returned to them with the buildings thereon, under an agreement that adequate provision would be made by those counties to provide for any cases of smallpox or other dangerously communicable disease occurring among the indigent.

Letter of State Health Officer to County Commissioners

Jacksonville, Fla., September 7, 1915.

To the Chairman, County Commissioners,
Duval County, Jacksonville, Fla.

Dear Sir:

At a special called meeting of the State Board of Health on August 30th, last, complaints, which have been received at the executive office of the Board from citizens of Duval County, concerning the location of the isolation hospital maintained by the State Board of Health at Sand Hills, for the treatment of smallpox, and other contagious and communicable diseases occurring or found in Duval County, and which complaints, it is understood have received consideration and concurrence of individual members of your Board, were discussed and I was instructed to write and say to the Board of County Commissioners of Duval County, that the State Board of Health thoroughly appreciates the fact that the building up of the district outside the City of Jacksonville, is bringing human habitation very close to the site which the County Commissioners of Duval County, in years past, donated to the State of Florida for the use of the State Board of Health, conditional for the continued treatment of contagious and communicable diseases.

While the Board does not believe that the care or treatment of smallpox at the Sand Hills site will ever menace the health of the residents of that section, yet the Board is not unmindful of an unreasonable fear and dread, which many persons have of disease, but which, however, does not exist among those who have availed themselves of the protection which vaccination assuredly gives against this disease; and because of this fear of close proximity to an isolation hospital especially maintained for contagious disease, I was instructed by the State Board of Health to submit to the Commissioners of Duval County two propositions, namely:

First, that another site with suitable buildings to be erected thereon, by the Board of County Commissioners be donated to the State Board of Health in lieu of the present Sand Hills location, or;

Second, that the State Board of Health will cease to use this site for the purpose of caring for indigent smallpox cases occurring in Duval County, and which then, under the terms of the gift would revert to the former owners of the land together with buildings thereon, provided the County Commissioners of Duval County will signify in writing to the State Board of Health, that suitable provisions will be made at the expense of the County Commissioners, for the housing of all indigent cases of smallpox or other communicable and contagious disease requiring isolation.

The State Board of Health is quite willing to surrender the terms of the gift of Duval County of the fifteen acres at Sand Hills under the conditions above mentioned.

An early reply is respectfully requested.

Action Taken by County Commissioners of Dade and Duval Relative to Isolation Hospitals

The county commissioners of Hillsborough and Escambia counties have not as yet consented to the plan proposed by the Board, but the isolation hospitals in Duval and Dade have already been transferred to the custody of the Commissioners of those counties and the State Board of Health relieved of any further expense attending the same. The buildings at the isolation hospital grounds of Escambia county are very much in need of repair and if not transferred to the custody and management of the proper authorities in that county, should undergo a very thorough renovation. The land on which these hospitals were erected was deeded specifically for the purpose of caring for certain communicable disease and under the conditions expressed in the deed of gift, that when it ceased to be used for those purposes, the property, with all buildings thereon should automatically revert to the counties which made the donation; the Board by refusing to further maintain these institutions would by this action, cease to recognize any further responsibility of management.

Bureau of Vital Statistics

The Bureau of Vital Statistics has made great progress since the reorganizing of system in accordance with statutory law. This Bureau had to be commenced anew by the employment of a Vital Statistician of the State Board of Health, who commenced his work in March, 1916. It has taken time and much patience because of the delay occasioned in correspondence with those selected as local registrars and sub-registrars, to tabulate births and deaths occurring in their several communities. The collection of statistics of any kind is a slow process of determining facts for resultant instructive study and the collection of vital statistics is no exception to the general rule for work of this character. Therefore, when it is learned that the organization of this Bureau had to be started from the ground floor, I think what has already been accomplished is deserving of commendation.

It is believed, however, that the time is not distant when Florida will be authorized and entitled to be admitted to the registration area of the United States, and that the repeated assertions that the healthfulness of the State at all seasons of the year is excellent, will be substantiated and maintained by statistical figures.

Bureau of Sanitary Engineering

The Bureau of Engineering was created as a part of the administrative policy of the State Board of Health on July 1st, 1916, and has already accomplished a great amount of work, not only in sanitary investigations of municipal water supplies and sewerage systems, but also of schools and community sewage disposal plants, and has been of service to individual citizens in their problems concerning the proper disposal of sewage, the obtaining of potable water for family use, and other kindred subjects.

Water and Chemical Work of Laboratory Put Under Supervision of Sanitary Engineer

Because of the importance of this branch or division of public health work, and because the water work and sewage examinations rightfully belong to the Engineering Bureau, the water and chemical part of the laboratory work has been placed under the supervision of the Chief of the Bureau of Sanitary Engineering, and this part of the work has been, as stated above, taken from the routine laboratory work.

Bureau of Veterinary Medicine

The Bureau of Veterinary medicine has also made decided advance in stimulating an earnest desire upon the part of the agricultural interests of the state to better their stock. Enthusiastic meetings for tick eradication have been especially observable during the entire year throughout the State, and as the State Board of Health, through its chief veterinarian, Dr. C. F. Dawson, was the pioneer in calling attention to the economic problem which confronted the people of Florida, in losses annually, which they sustained by permitting Texas fever to exist, through the medium of cattle ticks, it is gratifying now to see that the work of the previous half dozen years in continuous hammering on the subject by the Chief Veterinarian through the annual report of the Board, through personal writing and also by public addresses of various kinds and to different organizations, academic and rural, is bringing forth results, and expectations of still further improvement along these lines, is hoped for.

It is expected that the next legislature will be asked and urged to aid in this work financially and also by substantial legislation, looking toward the establishment of an organization designed more directly to protect the stock industry of the State.

Concerning Expenses of Various Bureaus and Departments and Salaries of Employees

If it can be accepted as an indisputable truism that it requires money to conduct any commercial business, or for that matter a business of any kind, so too, it may be admitted that funds are necessary to properly and effectively carry on a work of an educational or an academic character. In organizing any enterprise, it makes no difference whether commercial or educational, first it is necessary to have an experienced head. Secondly competent and skilled help. The reason that men fail in business enterprises now and again is that it is not the right man in the right place who is selected to be manager.

Inexperience begets costly methods and a final failure. It is believed that the success which has uniformly attended the State Board of Health from its organization has been largely due to a careful selection of technical assistants (by competive examination) and of efficient clerical force.

By making competency and ability the requirements of selection and engagement and divorcing from the appointment of technical and clerical force all pressure of friendship and favoritism the Executive Officer has gathered about him a working strength freed from political taint or the charge of payment of political debts for campaign services of any kind. Every technical Assistant has had to measure up to a standard established by an Examining Board, of which however, the State Health Officer, as Executive Officer of the Board has purposely not been a member, and every clerk has known that the stability of position depended upon the character of work and service rendered.

Every expenditure has been closely considered and scrutinized. It has been questioned whether the State Board of Health was not maintaining too large a salary pay roll. At a first glance, this criticism may seemingly have some weight, but after studying the subject, it will be realized that no educational process can be sustained to an effective standard without competent teachers and assistants to carry out the proposed system of work, which is conceived to be necessary in order that beneficial results may be delivered or obtained, any more than can a commercial business or a manufactory be run or maintained successfully without experienced helpers.

Expense of Office and Work at Time of Organization of Board

When the State Board of Health was organized in 1889 during the first years of its service, but $11,000.00 was spent and the work of the office was conducted by the executive officer and one stenographer. As the years passed on, and each succeeding session of the legislature added to the duties of the State Board of Health by imposing other functions of service, some of which were not intimately connected with the protection of the human against disease, it became necessary to add to the clerical force and to give to the executive officer competent assistance that the wishes of the people expressed through their legislature by the enactment of laws which increased the work of the Board, might be fulfilled.

Increased Scope of the Work

The system of bookkeeping maintained in the executive office affords a ready method of ascertaining the cost of maintenance of the different divisions of the State Board of Health's administrative work as well as the cost per item of all purchases, so that by the card index system which has been adopted, it takes but a few minutes to obtain any information regarding the expenditure of funds of the Board, for what made, and at what cost. The following statement which is taken from the records of the Board, will give a very clear and concise and accurate account of the receipts and expenditures for the last year, (1916):

STATEMENT OF EXPENDITURES OF THE STATE BOARD OF HEALTH OF FLORIDA FOR THE YEAR ENDED DECEMBER 31st, 1916, BY BUREAUS

Administration:			
General Expenses	$ 2,633.97		
Members of the Board	242.54		
Office of the President	666.95		
Administration Bldg. and Grounds	3,210.41		
Secretary and State Health Officer	4,656.89		
Office of the Secretary	6,773.55		
			$ 18,184.31
Bureau of Communicable Diseases:			
General Expenses	$ 3,680.09	$ 3,680.09	
Division of Field Service:			
Field Medical Officers	24,182.67		
District Public Health Nurses	16,239.10		
Sanitary Patrolmen	4,476.67	44,898.44	
Division of Diagnostic Laboratories:			
Jacksonville Laboratory	$11,021.63		
Tampa Laboratory	6,871.80		
Pensacola Laboratory	3,451.23		
Miami Laboratory	2,885.44		
Tallahassee Laboratory	1,039.14		
Key West Laboratory	382.05	25,651.29	
Isolation Hospitals:			
Jacksonville Hospital	$ 1,147.44		
Tampa Hospital	957.52		
Pensacola Hospital	390.20		
Miami Hospital	60.00	2,555.16	76,784.98
Bureau of Engineering			
General Expenses	$ 1,854.47		
Water Laboratory	473.78		2,328.25
Bureau of Education:			
Division of Exhibits (includes $10,045.62, cost construction three exhibit cars)	$17,434.19		
Division of Publications	6,214.13		23,648.32

Bureau of Child Welfare:		
Treatment of Crippled Children	$ 6,396.89	
Medical Inspection of School Children	4,792.78	11,189.67
Bureau of Vital Statistics	$12,491.98	12,491.98
Bureau of Veterinary Science	20,896.16	20,896.16
Total Expenditures during the year 1916		$165,523.67

STATEMENT OF RECEIPTS OF THE STATE BOARD OF HEALTH FOR THE YEAR ENDED DECEMBER 31, 1916

Approved accounts presented to the State Comptroller for payment (Section 1132 General Statutes)	$144,795.87*	
Requisition to Comptroller (Section 1133 General Statutes)	17,500.00	$162,295.87
Refunds to State Board of Health, returned to Comptroller	14.70	
Unexpended balance of requisitions returnable To Comptroller (Sec. 1133 General Statutes)	6,499.70	6,514.40
		$155,781.47
Approved accounts payable by the State Board of Health Dec. 31, 1916		9,742.20
Total amount expended during the year 1916		$165,523.67

Concerning Shortage of Funds End of 1916

The balance of State Board of Health funds in the treasury on January 1st, 1916, was given by the Comptroller as $23,906.87. The tax receipts of the State Board of Health for the year 1916 were given by the State Treasurer as $144,517.45, making a total amount available to the Board of $168,424.32 for carrying on its activities from January 1, 1916, to January 1, 1917. At its annual meeting, February 8, 1916, the Board, after looking into the condition of its funds, inaugurated such important health work as seemed justified by funds on hand and receivable. The State Health Officer was authorized to employ six additional public health nurses, who were urgently needed, and to employ also a vital statistician and a sanitary engineer, the services of whom seemed necessary. With the employment of an expert vital statistician, the work of the vital statistics bureau of the Board has made great progress, but has occasioned a relatively heavy expense during the year in the purchase of filing devices,

Expense of Vital Statistics Bureau

---

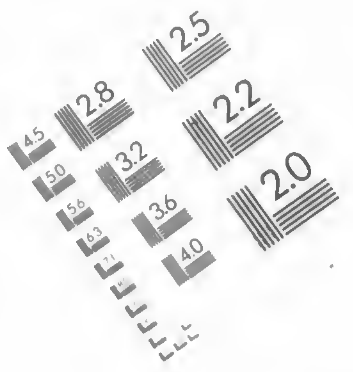
* Includes approved accounts discounted through the Lewis State Bank of Tallahassee.

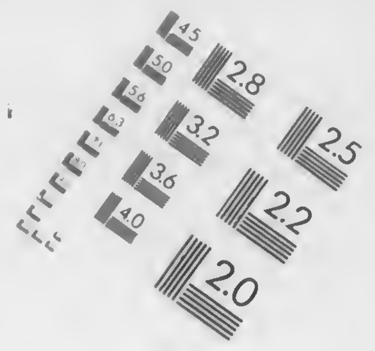
REDUCTION
RATIO
14:1

2.5 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

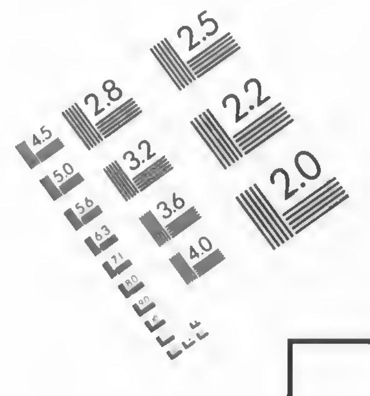
2.0 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

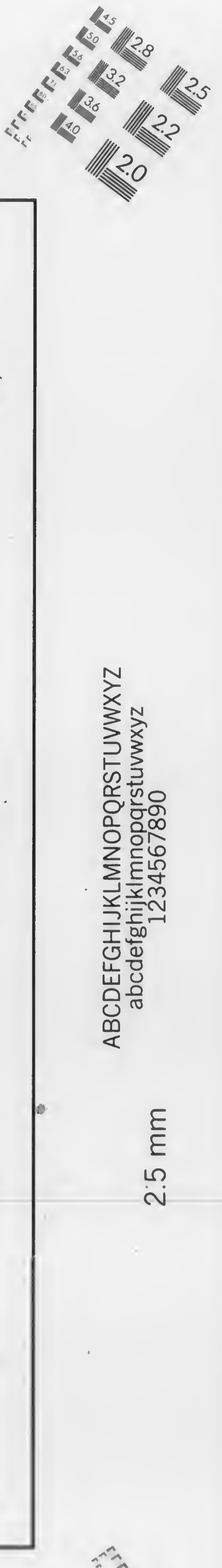
1.5 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

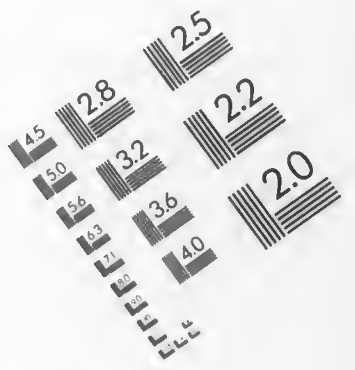


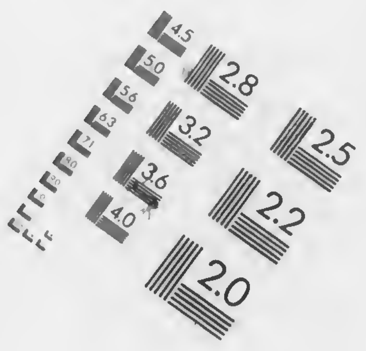


PM-MGP
METRIC GENERAL PURPOSE TARGET
PHOTOGRAPHIC





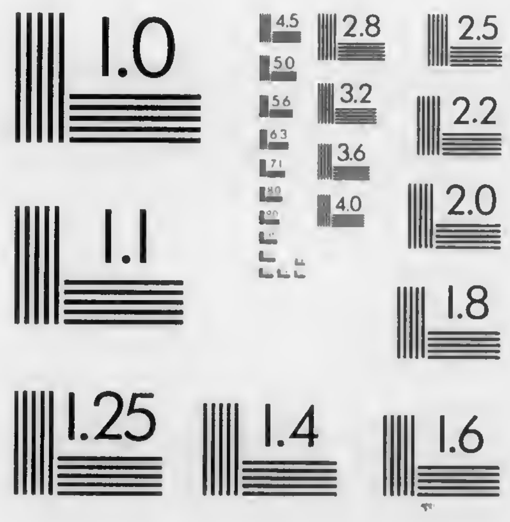




200 mm

150 mm

100 mm



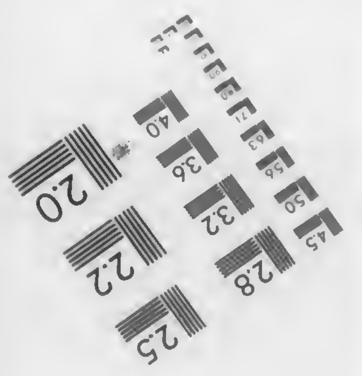
1.0 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

1.5 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

2.0 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

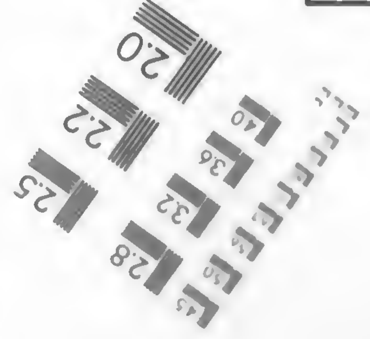
2.5 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

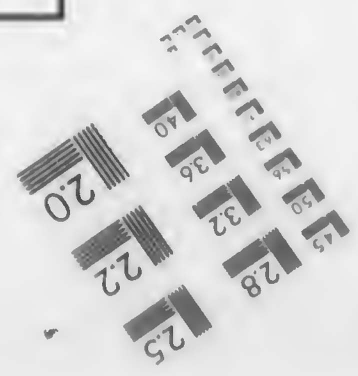
A5



A4

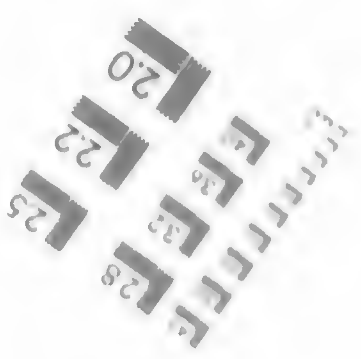
A3

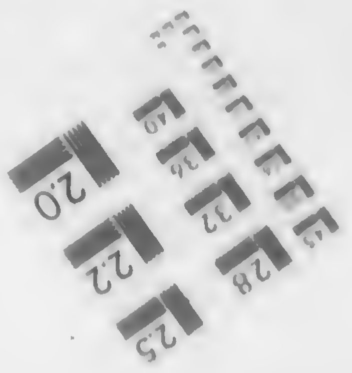




PRECISION℠ RESOLUTION TARGETS

A&P International
2715 Upper Afton Road, St. Paul, MN 55119-4760
612/738-9329 FAX 612/738-1496





4.5 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

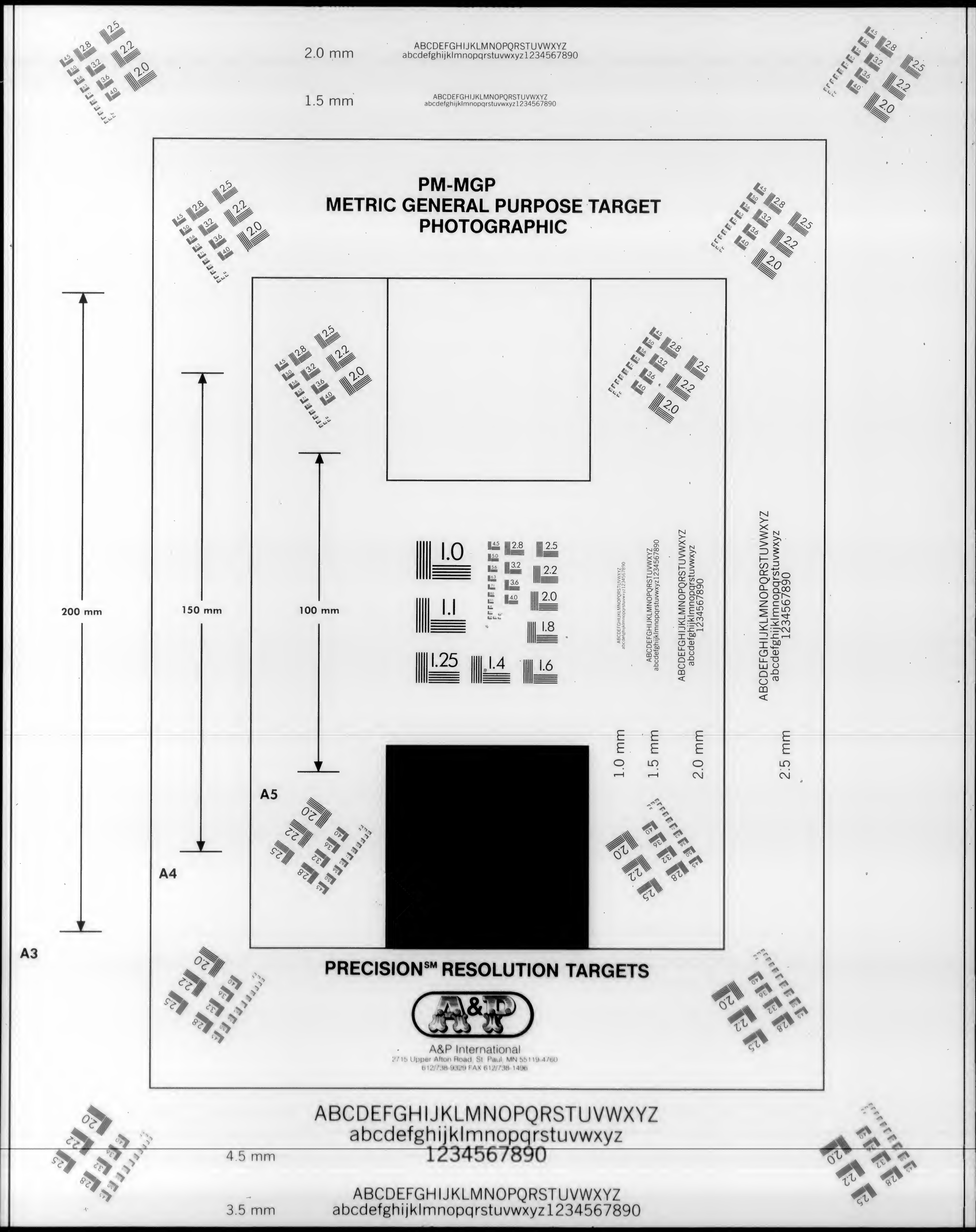
3.5 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

3.0 mm
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

STATEMENT OF EXPENDITURES OF THE STATE BOARD OF HEALTH FOR THE YEAR ENDED DECEMBER 31, 1916

	ADMINISTRATION						BUREAU OF COMMUNICABLE DISEASES														Bureau of Engineering		Bureau of Education		Bureau of Child Welfare				
								Division of Field Service			Division of Diagnostic Laboratories						Isolation Hospitals												
	General Expenses	Members of the Board	Office of the President	Administration Building and Grounds	Secretary and State Health Officer	Office of the Secretary	General Expenses	Field Medical Officers	District Public Health Nurses	Sanitary Patrolmen	Jacksonville	Tampa	Pensacola	Miami	Tallahassee	Key West	Jacksonville	Tampa	Pensacola	Miami	General Expenses	Water Laboratory	Division of Exhibits	Division of Publications	Treatment of Crippled Children	Medical Inspection of School Children	Bureau of Vital Statistics	Bureau of Veterinary Science	TOTAL
Adding machines and repairs						1.10																	35.00						36.10
Animal food											101.90	19.50	17.55	74.00															212.95
Animal yard supplies											128.20	6.60																	134.80
Animals											119.22	55.90	18.00	4.00	1.00														198.12
Antitoxins and vaccines							3,501.37																					10,090.00	13,591.37
Books, periodicals, reprints	73.62						59.42				5.37										13.80			346.00		4.40	6.50		509.11
Cars and equipment																							10,045.62						10,045.62
Charts, maps, plans, etc.								1.72	2.00												35.44		57.75	56.50			33.00	2.50	188.91
Cleaning supplies				6.34								9.08	1.54	4.39									2.00						23.35
Containers, mailing outfits											492.61	81.90			10.50							103.20						38.08	726.29
Dipping vats and material																												685.37	685.37
Drugs, chemicals, disinfectants											269.87	191.27	34.22	128.93	1.70	14.22		4.65				8.64	1.00					22.38	676.88
Dues to Societies	15.00																												15.00
Electrical supplies				14.80											1.25								106.55						122.60
Emergency services				31.25				27.20			4.90	1.00		2.00	4.00			32.00	10.00				81.25		181.00		5.00		379.60
Express, freight and drayage	61.82							14.16	7.12		120.98	28.72	4.01	16.28	7.07	7.68						22.42	102.13	16.72		14.71	3.44	20.45	447.71
Fire extinguishers																							19.00						19.00
Furniture, fixtures, filing devices				4.00		25.20					16.50	22.35									187.96		101.26				809.35		1,166.62
Gasoline and oil																		52.58					191.70						244.28
Guards, reimbursement for																												1,508.33	1,508.33
Grounds, care of				90.99																									90.99
Hardware				5.77							3.80	13.86			1.90			5.70					17.32					32.74	81.09
Heat, water, electricity, ice				635.96				2.50			247.24	267.86	114.97	28.00	12.25	38.30	38.00		4.45				92.75						1,482.28
Hospitals, maint. patients, etc																	67.15	282.64	2.25						4,579.22				4,931.26
Household supplies											7.50												57.85						57.85
Insurance and bonds	5.00			5.00																			670.00						678.50
[illegible]																					20.00								20.00
Laboratory supplies											606.60	506.38	83.35	168.23	23.31	29.46						123.00						2.60	1,542.93
Laundry	18.00										30.40	8.62	7.65	14.15	3.16								110.14						192.12
Mimeograph and repairs	10.00																												10.00
Miscellaneous	15.70		66.95					5.65	9.50		1.08		.25	1.05		.75					.45		11.55						112.93
Models and repairs																							952.11						952.11
Moving picture films																							440.00						440.00
Office supplies	5.50					4.80		2.85			1.65				2.95						41.83		1.00				67.45	6.50	134.53
Photos, cuts, Xray plates	26.35							8.45											4.25		12.78		31.50	19.85	111.20				214.38
Physicians' fees							119.30																			3,702.60			3,821.90
Plumbing				152.38							38.56	51.12						5.05											247.11
Press clippings and notices	48.95																												48.95
Printing	1,529.58	15.90				113.05		136.22	304.63	15.75	359.65	70.81	18.85	36.73	79.00						231.20		48.20	4,857.39	15.05	221.07	4,604.77	408.50	13,066.35
Registrars' fees																											2,746.27		2,746.27
Repairs and alterations				1,303.92							20.22	9.75	3.50		1.65			29.13	.50				606.01				38.14		2,012.82
Repairs to apparatus											22.22		1.89	7.35	2.00								1.00						34.46
Rent								224.32								240.00													464.32
Salaries		218.00	600.00	960.00	3,000.00	5,901.13		20,121.89	9,304.03	4,400.00	7,537.50	4,759.91	2,959.92	2,239.92	784.20		955.00	480.00	360.00	60.00	999.96	160.00	2,904.90	300.00	1,500.00		3,210.60	7,096.70	80,813.66
Scientific instruments								23.40			357.77	364.80	14.45	3.90		15.00					6.55	56.52						5.25	847.64
Screens																							2.50						2.50
Signs	1.50																						30.40						31.90
Stamps, P. O. box	332.53	8.64						308.81	56.62		263.80	102.50	10.00	40.31	18.21	.23					42.00		1.00	560.87	3.00	850.00	660.00	62.05	3,320.57
Stationery	188.80					362.93		62.62	153.27		81.95	72.15	12.79	23.99	6.25						33.17		42.25	56.80	7.42		207.43	39.30	1,351.12
Stereopticon repairs and slides																							28.55						28.55
Telegraph and telephone	301.62					127.54		60.87	.45		75.85	50.26	48.40	18.36	71.29	36.41	87.29	50.27	2.75				.98					41.79	974.13
Toilet supplies						15.00					20.00	7.20											43.58						85.78
Transporting indigent smallpox																		15.50	6.00										21.50
Traveling expenses					1,656.89	41.20		3,180.51	6,401.48	60.92	86.29	165.26	99.89	73.85	7.45						229.33		597.34					833.62	13,434.03
Typewriters and repairs						181.60		1.50				5.00															100.03		288.13
Total	2,633.97	242.54	666.95	3,210.41	4,656.89	6,773.55	3,680.09	24,182.67	16,239.10	4,476.67	11,021.63	6,871.80	3,451.23	2,885.44	1,039.14	382.05	1.147.44	957.52	390.20	60.00	1,854.47	473.78	17,434.19	6,214.13	6,396.89	4,792.78	12,491.98	20,896.16	165,523.67

REDUCTION
RATIO
12:1



2.0 mm ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

1.5 mm ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

PM-MGP
METRIC GENERAL PURPOSE TARGET PHOTOGRAPHIC

1.0 mm ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

1.5 mm ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

2.0 mm ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

2.5 mm ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

PRECISION℠ RESOLUTION TARGETS

A&P International
2715 Upper Afton Road, St. Paul, MN 55119-4760
612/738-9329 FAX 612/738-1496

4.5 mm ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

3.5 mm ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

office furniture, and a large amount of initial printed supplies for distribution to registrars in every voting precinct of the State, which expense however, is especially provided for in Sections 2 and 18 of the Act creating a Bureau of Vital Statistics approved May 27, 1915. Additional clerical assistance has also been necessary in this department which is also authorized by Legislative enactment, in the work of securing accurate vital statistics for the State and placing Florida in the United States registration area. Besides a heavy addition to the pay roll, the employment of additional public health nurses occasioned a large increase in travel expenditures for this corps of workers in making visits to the sick, and added to this the expense of supplies. Also with the establishment of a Bureau of Engineering, a relatively heavy expense for the year was necessitated in the purchase of laboratory equipment for the water laboratory, and office furniture, printed supplies and equipment for the office of the Sanitary Engineer. Although constructed in 1915, the educational health exhibit cars of the Board, which cost $10,045.62, were paid for in 1916. Due to the above cited increases in the activities of the Board, the total expenditure for the year was higher than for any year in the Board's existence, amounting to $165,523.67. The balance of funds in the treasury at the beginning of the year, as will be noted, was small, and the executive officer of the Board with much concern watched this balance dwindle as the months passed, but still he was reluctant to call a halt in any of the many activities of the Board, as he was confident that the tax receipts after November 1st, would again provide ample funds in the treasury. However, on October 1st, just a month before additional funds were to have been expected, the funds in the treasury to the credit of the State Board of Health were practically exhausted, and the obligations of the Board could not for the time being, be paid from the State treasury. Arrangements were therefore made with the Lewis State Bank of Tallahassee, which was willing to handle the vouchers of the Board, to discount the accounts of those who were unwilling to wait for payment through the regular course. After November 1st, however, as was expected, the tax receipts of the Board increased considerably and as this report is written, there promises to be again ample funds in the

Additional Expense in Employment of District Nurses

Additional Expense of Bureau of Sanitary Engineering

Payment Made for Health Exhibit Cars

Exhausted Funds in the Treasury

Arrangements Made With the Lewis State Bank for Payment of Vouchers at a 2% Discount

treasury to meet all indebtedness. None of the work of the Board was discontinued during the above period with the exception of field inspections and visits, which were held up pending the recuperation of funds in the treasury.

As the employees of the Board and others who accepted the payment of their accounts through the Lewis State Bank, in order to receive any funds at all, have been required to pay a discount of 2 per cent and certain other charges for collection, it only seems equitable that they should be reimbursed by the State for this expenditure, which was in the nature of, to them, a forced acceptance. It is recommended, therefore, that the next legislature shall provide for a relief of this matter to those who paid this discount for the privilege of receiving what was momentarily due them.

Referring to the Powers of the Board for Enforcing Regulations

Almost daily efforts are made to shift responsibility for existing sanitary defects in a municipality to the Executive Office of the State Board of Health.

Complaints, even from members of a city council themselves are made that the municipality as a Government will not pay due attention to requirements affecting the possible health of their city or town, and show a marked indifference to needful measures pertaining thereto.

While this is being penned, there comes a telephone message to the executive officer from a city marshal of one of the little tourist resorts asking, (to use his own language) "protection against the improper disposal of garbage and filth" which the municipality of which he is an official refuses to consider.

It is probably not improper to again call the attention of the people of Florida to the fact that the State Board of Health possesses no judicial powers, nor has it been granted any authority for arrests of violators of sanitary requirements, either of its own regulations or as specified in the statutes of the state, except in extreme cases, as during the general prevalence of a contagious disease, or when an epidemic of dangerously communicable disease threatens to seriously induce sickness or destroy life. A municipality under the general charter of incorporation has the authority under the constitution to enact ordinances which will compel observance by its citizens, of its edicts and commands in all matters relat-

ing to the preservation of the public health and for methods of promptly reprimanding or punishing offenders. These ordinances or laws can more promptly and speedily be enforced by municipal regulation than through the dilatory methods of a criminal or circuit court proceeding.

The failure to protect the lives of the citizens of a municipality therefore, rests upon the city council and should not be sought to be transferred to the State Board of Health, which, under the constitution is made a counselling and advisory body rather than a punitive means of enforcing sanitary regulations.

In the last annual report reference was made to this subject, because of the many appeals by individuals and by communities, to correct this or that error of a reported mismanagement of sanitary affairs within the confines of municipal authority.

It was said that:

> Most admirable measures for the prevention of disease and protection of health and life have been enacted into law by the will of the people through their representatives in legislative assembly of 1915, but unless these laws are enforced they might as well never have been written. The State Board of Health is not a judicial body; it has no legal authority to summon witnesses, try offenders against the statutes or to inflict punishment, such as the Railroad Commission possesses. The proper law officers of the State—the sheriff and solicitors of the several counties are the officials to see that these requirements so necessary to protect life and preserve health are complied with by the indifferent and careless.

Again, later on in a press service article of the Board, this observation was emphasized very forcibly by saying:

> Of making laws there is no end—to their enforcement there is a decided limit.
>
> There is no reason to believe that Floridians are much below—or above—the average in their disregard of law. Most of us would be grieved—perhaps angry to be told that we are habitual law breakers, but it's a fact. We don't commit murder, we are not highwaymen, we don't steal, we pay the grocer and the tailor, we are tolerably regular in attendance on Sunday church services, and we pride ourselves that we are pretty decent citizens.
>
> It's all right so far as it goes, but there are some other debts we don't pay, some very important laws we break regularly and often, and the worst of it is that when it's proved to us, we smile and, in fact, we don't care.
>
> Every intelligent citizen knows that good health, personal and community, is the basic fact of individual and community prosperity. In other words, if we are weak and sickly, if we don't have physical health and strength, all the rest is hardly worth the while.
>
> The statute books of Florida carry some very important enactments, which were put there to conserve the public health of Florida

citizens, and as the public is made up of individuals; they are intended to protect the individual in his inalienable right to health and to be protected from the results of his neighbor's sins of selfishness, neglect and wilfulness.

These laws are the concrete expressions of long experience, observation and study not by Florida doctors and sanitarians alone, but the aggregated wisdom of leading scientific men everywhere. They are not the "whims and foolishness of doctors," but they are the results of the combined wisdom of doctors, than whom no body of men has accomplished more for the welfare of mankind. Only the ignorant and narrow-minded will question the statement.

Why aren't the health laws of Florida enforced universally instead of spasmodically or not at all? One reason is that, excepting under extreme and unusual conditions, when we can't help the personal application, most of us apply them to the other fellow and not to ourselves. We don't and won't recognize ourselves as the real offenders.

Another reason is that because we don't immediately see the why and the importance of this or that enactment for the protection of health, we conclude that it isn't worth while anyway and promptly forget it.

Still another reason of the failure to enforce these laws is the personal relationships of public officials, (sworn to enforce these as well as all other laws) to proven offenders. There's the fear of weakening political pull. Take an example; it's based on facts, only the names are fictitious. A representative of the State Board of Health sees on Tom Jones' fruitstand a lot of fruit and vegetables, "intended to be eaten without being washed," unscreened and surrounded by swarms of flies. He protests, hears an excuse and gets a promise that the conditions shall be remedied, which, of course, isn't done, because Tom doesn't have to.

Gathering evidence and witnesses the complaint formally written out, is handed to Bill Smith, the jovial public prosecutor, and the complainant as citizen of the State demands that the fruit be covered and that Tom Jones be punished. Now Tom has been doing this same thing for years, but Bill knows Tom personally and knows that he's a pretty decent fellow, and when the Board representative goes, the memoranda are promptly stuffed into a pigeon hole to gather the dust of weeks or months, perhaps of years.

What's the real remedy? In the present apathetic condition of public sentiment (in many, not all, Florida communities) nothing short of an epidemic of typhoid fever or other disease, traceable directly to these unremedied offenses against reasonable health regulations. Of course, such a cure of law-breaking would be expensive in life and funeral expenses, but in practically every county and community in Florida such unremedied conditions exist, unprotested and inviting the visitation of disease and death.

These "mysterious dispensations of Providence" are no mysteries at all; they are the direct, traceable results of the more or less deliberate fractures of law, moral and civic.

There would be small sympathy for the man who rushed in front of a locomotive racing along at sixty miles an hour. The sympathy would be reserved for the family and friends, and if any were left for him, it would be: "Poor fellow, he was crazy." He would have met his death by violation of a natural law and he knew perfectly well the result of such violation. He would be no more and no less, deserving of sympathy than the hundreds who daily violate known health laws, written or unwritten.

At the risk of repetition these previous observations are again referred to, for it cannot be stated too often that the Board acts in an advisory capacity only, in dealing with affairs of sanitary control or management, either of the domestic matters of the individual or community problems affecting the people as a whole, and cannot exercise punitive powers. This latter enforcement must be dealt with if dealt with at all by the Courts of the State and by their officials.

There are sufficient laws on the statute books of Florida to properly safeguard the health of the people, "if those whose duty it is to enforce them would act upon the information filed from time to time against the offenders."

The Executive Officer has never approved of "washing soiled linen" of indifference to hygienic and sanitary observance and exposing it before the eyes of the general public. It has preferred to, and a long experience in this line of effort has taught the wisdom of this practice, to pursue a more conservative course conducive of results. It is not only believed but it is known that more can be accomplished through pacific measures than by the use of the "big stick" through the daily press, and by publicity, calling attention to the fact that John Jones or Henry Smith has not screened his fruit stand, or if a large tenement owner has not constructed the necessary conveniences connected therewith, the safeguard from fly contamination. A notice from the proper law officer of the court that information has been filed of such violation of the statutes generally brings the desired correction.

At this time the Executive Officer has no recommendation to make which might bring in to force new laws, for the further betterment of the public health, other than such suggestions and hints toward improving certain conditions now existing, either by alteration or substitution, and which are found elsewhere in the body of this report.

In concluding the synopsis of the management of the health service for the past year, as embodied in the reports of the different Bureaus, the Executive Officer desires to thank the President and members of the Board for their approval of the policy which, as Executive Officer, he has followed, and to further express his appreciation of the efforts of those of his assistants, technical as well as clerical who have been loyal to the Board and himself and who have been faithful in the performance of their several duties.

Respectfully submitted,

Joseph Y. Porter,
State Health Officer.

REPORT OF DR. C. H. DOBBS

Chief of Bureau of Communicable Diseases

REPORT OF DR. C. H. DOBBS

Chief of Bureau of Communicable Diseases

JACKSONVILLE, FLA., December 31, 1916.

DR. JOSEPH Y. PORTER,
State Health Officer,
Jacksonville, Fla.

DEAR DOCTOR:

Herewith are transmitted the reports of the various divisions of the Bureau of Communicable Diseases and for your consideration there is submitted a resume of the activities of this Bureau in its various branches since its establishment last March, following the survey of public health administration in this State as conducted by Dr. Carroll Fox, Surgeon of the United States Public Health Service.

The Bureau under its present scheme of organization comprises the following divisions:

Division of Field Service:
- District Assistants to State Health Officer, (State District Health Officers).
- County Agents
- Sanitary Patrolmen
- District Public Health Nurses
- Isolation Hospitals, (Jacksonville, Tampa, Miami, Pensacola)

Division of Diagnostic Laboratories: embracing
- Central Laboratory, Jacksonville, and
- Branch Laboratory, Tampa
- Branch Laboratory, Pensacola
- Branch Laboratory, Miami
- Branch Laboratory, Tallahassee
- Branch Laboratory, Key West.

Division of Child Hygiene: embracing
- Treatment Crippled Children under State Law
- Health Supervision of School Children
  - In Doctor Fox's report it was recommended that this work be included under a separate Bureau of Child Hygiene, but as this Bureau has not yet been established this work has come under the supervision of the Bureau of Communicable Diseases.

Relative to Recommendations of Dr. Fox

It was the opinion of Dr. Fox, after his study of health agencies in Florida, which opinion is concurred in by the State Board of Health, that the correlation under one head of various departments and divisions of the State Board of Health concerned in the management, control and prevention of communicable diseases would bring about more satisfactory results, than under the organization formerly in effect, whereby the laboratories and the field force worked more or less independently of each other.

Relative to Rule Requiring Report of Communicable Disease

It is exceedingly unfortunate that it has never been possible to strictly enforce the State Board of Health rule requiring reports of the occurrence of cases of communicable disease within our State. We must, therefore, rely very largely upon the record of specimens examined in our various laboratories in determining the prevalence of communicable diseases and in comparing this prevalence with the rate of incidence of these diseases in preceding years.

A tabulation of the distribution of various diseases as diagnosed by the State Board of Health laboratories will be found in this report in the discussion of the work of the laboratories.

No Serious Outbreaks of Communicable Diseases

It is encouraging to note, however, that there have been no serious outbreaks of communicable disease throughout the entire year, with the exception of an unusual prevalence of malaria in the western portion of the State following severe storms along the gulf coast during the past summer and the resultant rise of the inland streams with the consequent increase in the number of mosquitoes.

Florida was exceptionally fortunate in suffering in no way from the epidemic of infantile paralysis which prevailed in New York and neighboring states during July and August.

Relative to Precautions Taken to Guard Against Introduction of Infantile Paralysis

The seriousness of this situation, however, seemed to demand special precautions for the prevention of the importation of the disease into our state. This Bureau accordingly, began in July (with some assistance from the municipal health department of Jacksonville) a very thorough inspection of children on all incoming trains and boats, from outside our own boundaries. Doctors C. T. Young and J. E. Taylor, Assistants to the State Health Officer, were detailed to Jacksonville for two months in connection with this inspection service; Dr. Taylor being relieved for two weeks or more by Dr. W. P. Crigler, Assistant to the State Health Officer. Two of the district public health nurses, Mrs. M. E. Roach, and Miss Margaret Bennett, were also utilized in this service, and were not engaged in the regular duties of their respective districts from July 15th to October 1st.

In this inspection service all children under sixteen years of age were given a cursory examination and a record made of the temperature at the time of arrival here. As complete data as possible were secured as to name, age of the child, name of the parent, point of origin, the time of residence there, and the point of destination. This information was filed in this office and was transcribed upon forms which were promptly mailed to the municipal authorities at points of destination with the recommendation that such children when showing any abnormality or when believed to have come from an infected area, be kept under observation for a period of at least two weeks after arrival. No quarantine nor any restrictions of any nature were established regarding travel into this State nor was it thought at all feasible or necessary to attempt such measures. The inspection of all children under sixteen at Jacksonville and observation of these children for a period of two weeks after arrival at destination seemed, under the circumstances, to be entirely adequate precautions.

During the year there have been reported to this office twelve cases of acute anterior poliomyelitis, but a thorough investigation in each case has failed to reveal any possibility of connection with the outbreak in New York.

A train inspection service, similar to that maintained in Jacksonville was performed at Flomaton near the Alabama boundary. The work at that point was in charge of Dr. C. W. D'Alemberte, Assistant to the State Health Officer who was assisted by Miss Eula Lee Paschall, District Public Health nurse, and Mr. L. J. Anderson, Sanitary Patrolman.

As previously stated, there are no morbidity reports of sufficient accuracy or completeness to be of any value whatsoever. The reports of the laboratories however, show a material decrease in diphtheria and typhoid as compared with 1915.

This decrease will be shown in certain charts and tabulations under our discussion of the work of the laboratories.

Decrease in Smallpox

The incidence of smallpox has also been decidedly less than during the past few years, as will be seen from a reference to the accompanying table.

REPORTED INCIDENCE OF SMALLPOX 1912-1916

Year	1912	1913	1914	1915	1916
Reported cases	1,713	1,166	583	236	90

This steady decrease in the prevalence of this malady is of course, due to the constantly increasing proportion of immunized persons among our population as a result of the vigorous campaign of vaccination which has been waged by the State Board of Health, since its inauguration, and which is being constantly carried on by this department and by the medical profession throughout our State.

Our records show that during the past year 6138 vaccine points were distributed and presumably this number of persons was vaccinated.

You will note that this is a decrease as compared with the number vaccinated during 1915, but as has been frequently pointed out, the number of vaccinations varies in direct ratio to the incidence of smallpox, as it is unfortunately a fact that the great majority of persons require the incentive of fear incited by an existing or threatened epidemic of the disease, before they will avail themselves of the protection afforded by the simple prophylactic measures which may be employed.

Isolation Hospitals

In this connection, I will mention the isolation hospitals which have been maintained and operated by the State Board of Health at Jacksonville, Pensacola, Tampa and Miami, having been considered the most feasible and economical plan for carrying out the provisions of the statutes requiring the care by the State Board of all indigent cases of smallpox occurring in the State. During recent years the decreasing prevalence of smallpox has rendered the maintenance of these hospitals almost unnecessary, and the expense incident thereto has appeared to be a useless expenditure of state funds, particularly as their actual value in materially preventing the spread of the disease and thus decreasing its occurrence in the State is exceedingly doubtful, in so much as it cannot be hoped that the isolation of a few cases in institutions of this nature will greatly decrease the incidence of the disease which must rather be controlled by extended vaccination of our citizens. Quarantine controls only the reported or discovered cases of the disease; it does not protect the individual from mild unrecognized or unknown cases which are often far in excess of the number reported. Vaccination alone can furnish this protection. Accordingly during the past year the hospitals at Miami, and Jacksonville have been abandoned and the property (which was originally donated by these counties for this purpose) has been allowed to revert to them.

The hospitals at Tampa and Pensacola are still maintained, but it is believed that it would be wise to dispense with them as at Jacksonville and Miami.

Distribution of Antityphoid Vaccines

The distribution of anti-typhoid vaccine has been continued through certain distributing stations in accordance with the plan outlined in a previous report.

This system of distribution has become more widely known during the past year, and has been taken advantage of to an increased extent. The same is true as regards the distribution of diphtheria and tetanus anti-toxins. The appended table sets forth the number of persons receiving these prophylactics and shows the area of distribution by counties.

Prevalence of Rabies

A serious problem which still confronts us, is the continued prevalence of rabies. It appears that practically no advance has been made toward the proper confinement or muzzling of dogs and other animals for the prevention of the spread of this disease, and the protection of the public health.

During the past year 122 examinations were made in the laboratories of the Board in order to determine whether or not certain animals were rabid. 37 of these examinations were positive. 57 persons were reported to have been bitten by rabid or supposedly rabid animals, and received treatment through this office. 51 of these were indigent and received the anti-rabic vaccine at the expense of the State Board of Health.

The records of the Bureau of Vital Statistics show 2 deaths from hydrophobia.

This loss of life and this expenditure, as well as the untold suffering and anguish which cannot be stated in concrete figures of dollars and cents, are entirely unnecessary, and could be readily prevented without hardship, and with but little inconvenience to any one. Proper muzzling laws rigidly enforced for a single year would entirely eradicate rabies in Florida, and stringent temporary enforcement of the same measures in future, in the event of the introduction of the disease by means of stray animals from outside the state, would effectually prevent its recurrence.

DISTRIBUTION BIOLOGICAL PRODUCTS

Number of persons receiving biological products through the State Board of Health. (Anti-rabic and anti-typhoid vaccines and diphtheria and tetanus antitoxin free to indigent only.)

County	Anti-Smallpox Vaccine	Anti-Rabic Vaccine	Anti-Typhoid Vaccine Prophylactic	Diphtheria Antitoxin Curative and Immunizing	Tetanus Antitoxin Immunizing
Alachua	150	1	0	10	0
Bay	10	0	0	0	0
Bradford	2	1	1	9	0
Brevard	30	3	0	0	0
Citrus	0	1	0	0	0
Columbia	10	3	19	1	0
Clay	30	0	0	0	0
Dade	572	0	0	0	0
DeSoto	80	0	1	4	0
Duval	977	14	190	139	16
Escambia	90	0	50	15	1
Franklin	10	0	180	0	0
Gadsden	230	2	23	22	0
Hamilton	30	0	0	0	0
Hillsborough	595	2	0	15	0
Jackson	50	0	10	0	0
Jefferson	0	3	0	1	0
LaFayette	110	0	0	0	0
Lake	20	0	0	0	0
Leon	10	12	8	2	0
Levy	0	4	0	0	0
Madison	20	1	0	12	0
Manatee	40	0	0	0	0
Marion	202	0	0	2	0
Monroe	160	0	390	5	16
Nassau	120	0	0	0	0
Okaloosa	0	2	0	0	0
Orange	10	0	0	0	0
Osceola	0	0	0	2	0
Palm Beach	60	0	0	0	0
Pasco	0	3	0	0	0
Polk	0	0	30	21	0
Pinellas	30	0	7	2	0
Putnam	40	0	0	2	0
Santa Rosa	0	0	8	5	0
Seminole	250	0	0	4	0
St. Johns	1,270	0	10	4	0
St. Lucie	100	0	0	0	0
Sumter	0	0	10	0	0
Suwannee	60	0	16	0	0
Taylor	10	3	0	0	0
Volusia	490	1	60	5	0
Walton	0	0	33	5	0
Washington	0	0	0	8	0
Totals	6,138	57	1,046	299	33

HOOKWORM DISEASE

Concerning Prevention and Eradication

A most important problem which still confronts the State Board of Health is the question of the prevention and eradication of hookworm disease. Florida was the first of the States to inaugurate an active campaign for the control of this malady and the efforts that were exerted by the Board during the years 1909 to 1914 resulted in the education of the great majority of Florida citizens in the fundamental measures essential to the suppression of this disease. The Board accordingly felt that its duty had been accomplished through this educational campaign and that further efforts to treat individual cases should be discontinued and this work allowed to proceed under the supervision of the practicing physicians of the State, where it rightfully belongs.

It was found too, that in the great majority of instances the necessary precautions and sanitary improvements were not adopted by the families receiving free treatment from the State, the result being that within a very short time after their cure the patients became reinfected through the same insanitary conditions about the rural home, which had been responsible for their initial infection. For this reason the plan which has been adhered to during the past year is as follows:

Plan of Treatment

Free treatment has been furnished to any resident of the State, after diagnosis in our laboratories, and the treatment has been continued until a complete cure was effected on condition that some satisfactory means of sewage disposal approved by the State Board of Health was provided in order that this treatment might be of permanent benefit and the expense incurred by the State should be justified.

It is believed that more real benefit will be derived by the treatment of a few cases under these conditions than by the treatment of many cases under unsatisfactory conditions where reinfection is the rule rather than the exception.

However, the decreasing number of examinations for animal parasites in the laboratories of the State Board of Health indicate that the public is losing interest in this important matter. It would therefore seem advisable during the coming year to institute a campaign which will not only serve to again arouse the people of Florida to the importance of this subject

but which will at the same time enable the Board to gather much valuable data for a careful study of the effect of hookworm disease upon the child with special reference to the decrease of mental efficiency, judged on the basis of scholarship.

New Plan of Studying the Effect of Hookworm Disease

Briefly, the plan in mind is as follows: That one urban and one rural school in each county of the State be selected by the District Assistant to the State Health Officer in whose district that county may be located, that every pupil in these schools be microscopically examined for hookworm disease and that they be also given a careful clinical examination in order to determine approximately the severity of the infection as evidenced by the physical signs of the disease.

These data may then be tabulated separately for the urban and rural schools in such manner as to show the total number of children examined, number and per cent of children not infected, mildly infected, and severely infected; divided into groups according to class standing. For example: above 75 per cent, from 50 per cent to 75 per cent, and below 50 per cent. When compiled for this entire number of schools, covering every section of the State, these data will supply the basis for a very valuable comparative study of the prevalence of the disease in sewered and unsewered communities and of its effect upon the mentality of the school child.

ASSISTANTS TO STATE HEALTH OFFICER

Changes in Personnel

At the beginning of the year 1916 there were employed seven district Assistants to the State Health Officer. During March, Dr. C. T. Young, at that time employed as Assistant to the State Health Officer for the State at large, not being assigned to any particular district, requested temporary leave of absence, without pay, which leave was granted and Dr. E. M. Brevard, of Tallahassee was appointed as Acting Assistant to the State Health Officer to fill this temporary vacancy.

Reorganization of Districts

In July it was decided that, for the best interests of the field service and with a view to increasing the effectiveness of the sanitary supervision of the various sections of the State, it would be advisable to increase the number of districts to eight, and to alter the boundary lines somewhat to provide for greater facility for transportation within each district. This reorganization of districts was accordingly effected at that time. Dr. E. M. Brevard, being temporarily placed in charge of the newly formed west central district with headquarters at Tallahassee, while Dr. C. T. Young, who had returned to the service, was assigned to the south central district with headquarters at Lakeland.

Dr. Brevard, was later an applicant in a competitive examination held in the executive office of the Board for the purpose of permanently filling the vacancy in Tallahassee district, and selecting an Assistant to the State Health Officer for service in charge of the Educational Health Exhibit Train.

Dr. Brevard was successful in securing the first of these appointments, while the latter was awarded to Dr. R. Dean Tompkins, of Jasper.

Duties of Assistants to State Health Officer

The district Assistants to the State Health Officer are required to make monthly inspection trips throughout their entire territory visiting all the principal centers of population, ascertaining the prevailing sanitary conditions, and advising with the municipal authorities as to necessary corrective measures for the improvement of conditions and the protection and conservation of the public health. They are also available at all times for special details to any point in their districts (or if necessary, to any point in the State) when the exigencies of the situation seem to demand such detail for the control of outbreaks of communicable disease which menace the health of communities.

The reports from several of the districts are very encouraging and it appears that the more frequent visits during the past year are resulting in a more strict enforcement of the local ordinances and state laws especially with reference to screening of surface privies, both public and private, and protection of foods from contamination by means of flies.

During the year there were made by the Assistants to the State Health Officer 694 visits outside of their headquarters. A tabulation of these visits by districts, and showing the nature of the service performed upon these inspection trips is given herewith:

District	Total No. Visits Outside Headquarters	Routine Inspections	Special Details: Sanitary Inspections	Special Details: Communicable Diseases	Special Details: Educational	Special Details: Vital Statistics	Remarks
South East Coast	34	31	10	14	29	2	Laboratory work at headquarters.
West Coast	164	109	35	44	10	3	
Western District..	11	10	2	2	0	3	Special train service headquarters, August and September. Poliomyelitis. Illness January, February and March.
South Central	63	34	15	28	2	2	Leave without pay March to July. Special train inspection Jacksonville.
Central	50	23	11	29	2	3	August and September. Poliomyelitis. Special train inspection Jacksonville. 15 days August, 2 days September. Polio.
North Central	214	60	14	36	116	1	Special train inspection Jacksonville August and September. Poliomyelitis.
North East Coast	117	74	8	12	27	3	
West Central	41	25	10	20	0	2	Entered Service May, 1916.
Total.........	694	366	105	185	186	19	

This tabulation does not include numerous routine inspections, control of communicable diseases, sanitary inspections, routine office work, etc., in headquarters.

The apparent discrepancy between total number of visits and the total of the several columns showing different details is accounted for by the fact that in many instances two or more details were performed during a single visit to a locality.

Routine inspections were discontinued during the months of November and December because of the temporary shortage of funds making it necessary to curtail expenses of travel as much as possible.

DISTRICT PUBLIC HEALTH NURSES

Qualifications for Appointment

The term "nurse" as applied to the district sociological and sanitary instructor is a misnomer, as actual nursing care is seldom rendered, the chief function of these public health nurses being educational. "Instructor" would probably be preferable, but the former term has come to be generally accepted in this sense and has a very different meaning as applied in this connection.

This service is not necessarily limited to graduate nurses; undergraduate and non-graduate nurses have in some instances proven themselves exceptionally efficient in this line of endeavor when especially well qualified by reason of their general education and their interest and knowledge of public health subjects.

Of thirteen nurses employed by the Board (one colored) nine are graduates, one is an experienced nurse who has had special courses, but who is not a graduate of a general hospital. The remaining three have had little special training, but through extensive reading and study have acquired a comprehensive knowledge of public health subjects. They have had considerable experience as instructors, which fits them for this particular line of public health education. All appointments have been made by competitive examination and while the action of the Board in employing some non-graduates has called forth protest from the State Nurses Association, it is believed that such protest is entirely unwarranted, though it is not desired to depreciate the value and necessity of some special training. In support of this position it may be cited that many of the foremost of the public health workers and authorities in America are not medical graduates; in fact, the membership of the American Public Health Association includes a very large proportion of men who hold no medical degree. The appointment of non-graduates as public health nurses is subject to the same general principle.

The district nursing service in Florida was inaugurated in April, 1914, when one nurse was appointed, two additional appointments being made in October of the same year. Prior to that time practically no reports had been received concerning the prevalence or distribution of tuberculosis in Florida.

Changes in Personnel

In 1915 one of the nurses resigned leaving two in the field. Four more appointments were made in July, 1915, so that at the beginning of the past year there were six women actively engaged in this service. The Board in annual meeting last February considered it advisable to increase this force, and two competitive examinations were accordingly held as a result of which seven additional appointments were made in July, 1916. One of these appointments was that of a colored nurse who is not assigned to a district, but who supplements the work of the white nurses among her own race, devoting her energies principally to an improvement of living conditions among the colored race in the larger centers of population.

In November Miss Elsie L. Forrest, in the fourth nursing district, with headquarters at Madison, resigned from the service of the Board. This vacancy has not as yet been filled, leaving at the close of the year eleven white nurses and one colored nurse in this service.

Extension of Scope of Work

The work of these women was at first confined almost solely to the prosecution of an anti-tuberculosis campaign but has recently been extended in its scope to include all lines of public health activities. Much good has been accomplished through the schools and through cooperation with the home economics clubs of the Department of Agriculture. These clubs hold short institutes in the various counties, and our instructors are practically always included in their programs for educational addresses along public health lines.

The district nurses are under the direct supervision of the district assistants to the State Health Officer and their services are available at all times for special assistance in the control of communicable diseases, and in any other branch of work where they may be used to advantage. As before stated, the work of these women has in the past been very largely confined to work among tuberculous patients, each patient being visited approximately once in two months. The results have been very gratifying in as much as their reports show that in about 63 per cent of all cases visited their instructions are being followed to the best of the patient's ability. In exceedingly few instances has there been any feeling of resentment. There follows herewith, a tabulation showing the amount of work accomplished along this line, cases visited, etc., by these women during the past year.

The varied lines of activity in which they are engaged renders it practically impossible to show in a statistical table the other service performed by them in addition to the anti-tuberculosis crusade.

ANTI-TUBERCULOSIS WORK JANUARY 1st to JUNE 30, 1916

District	Total No. Patients Under Instruction Jan. 1, 1916	New Cases Found	Cases Found to Have Died	Cases Removed	Cases Apparently Cured	Total No. Patients in District Under Instruction June 30, 1916	Total No. Patients Following Instruction
Western	104	98	65	22	4	111	60
South Western	148	135	32	31	4	216	140
North Central	176	140	26	23	0	267	202
West Central	119	166	28	27	24	206	117
East Coast	240	260	74	82	26	318	318
Central†	92	10	0	23	0	79	*
Total	879	809	225	208	58	1,197	837

† Nurse in charge of this district on temporary leave of absence without pay February to July.
* Not reported.

ANTI-TUBERCULOSIS WORK JULY 1st to DECEMBER 31, 1916

District	Total No. Patients Under Instruction July 1, 1916	New Cases Found	Cases Found to Have Died	Cases Removed	Cases Apparently Cured	Total No. Patients in District Under Instruction Dec. 31, 1916	Total No. Patients Following Instruction
No. 1†	68	37	27	11	3	64	51
No. 2**	43	9	4	0	0	48	25
No. 3	122	72	14	14	13	153	91
No. 4	84	46	19	27	10	74	64
No. 5	138	56	20	16	5	153	98
No. 6	164	89	15	14	8	216	168
No. 7	64	62	42	23	9	52	*
No. 8	29	126	15	12	13	115	60
No. 9	134	61	16	11	4	164	164
No. 10	136	61	26	40	3	128	81
No. 11	66	94	25	22	6	107	74
No. 12***	149	103	34	18	10	190	*
Colored Nurse State at Large	...	176	16	8	6	146	146
Total	1,197	992	273	216	90	1,610	1,006

* Not reported.

** Nurse in charge of this district on special service Jacksonville account poliomyelitis July, August and September.

*** Nurse in charge of this district on special service Jacksonville account poliomyelitis July, August and September. Both districts 9 and 12 covered for these months by nurse in charge of district No. 9.

† Nurse in charge of this district on special service Flomaton, account poliomyelitis, July, August and September.

This work is, of course, in its infancy in this State. The limited experience of some two and a half years has served to point out certain defects and deficiencies in the methods followed, and to permit of the formulation of plans for the future, which it is thought will bring forth excellent results.

COUNTY AGENTS AND SANITARY PATROLMEN

Only two changes in the personnel have occurred during the past year among the county agents and sanitary patrolmen. Dr. H. A. Johnston of Palatka was appointed as County Agent to assume supervision over the local health affairs of Putnam County. Mr. Roland Curry who for several years filled the position of sanitary patrolman of the State Board of Health at Key West resigned his position which has remained vacant since that time.

DIAGNOSTIC LABORATORIES

There are in operation at the close of 1916 six diagnostic laboratories located as follows:

Central laboratory at Jacksonville and branch laboratories at Tampa, Pensacola, Miami, Tallahassee and Key West.

Changes in Personnel

In January Dr. W. A. Claxton, Bacteriologist in charge of the Tallahassee laboratory resigned his position to accept a commission in the Canadian Army. This laboratory was accordingly closed and was not reopened until the latter part of September when Dr. Harold H. Fox was assigned to Tallahassee, to assume charge.

In June Dr. Henry Hanson, who had filled the position of Senior Bacteriologist in charge of the laboratories of the State Board of Health since 1909, severed his connection with the Board in order to establish a private clinical laboratory in this city. After a careful consideration of the question it was decided to discontinue the position of Senior Bacteriologist, placing the administrative supervision of the various laboratories directly under the Chief of this Bureau. Dr. E. G. Birge, who had served several years as Assistant Bacteriologist in the branch laboratory at Tampa was accordingly transferred to the position of bacteriologist in charge of the central laboratory and the services of Dr. C. E. Roderick were secured to fill the vacancy thus created at Tampa.

Two other changes have occurred in the personnel of the central laboratory staff during the year. Mr. O. O. Fisher resigned in September to enter the medical department of Johns Hopkins University, and Dr. J. R. Bean removed in November to Birmingham, Ala., where he accepted a position as pathologist. These two vacancies have not been filled as it has been found that the work can be satisfactorily and economically conducted without increasing the present force, especially in view of the fact that there has been established under the Bureau of Engineering a water and sewage laboratory which relieves the diagnostic laboratory of work of this nature.

Number of Examinations

The total number of examinations performed in all the laboratories during 1916 was 35,116, a decrease of 4,731 as compared with 1915. Upon referring to the appended charts it will be found that this decrease occurred in the examinations for malaria, typhoid and diphtheria and is accounted for by the decreased prevalence of those diseases during the past year, and a resultant decrease in the number of suspected cases requiring laboratory diagnosis, which was especially marked as regards the number of examinations for diphtheria. A further decrease is accounted for by the fact that water and sewage examinations are included in this year's report under the Bureau of Sanitary Engineering, rather than in the reports of the diagnostic laboratories.

Wassermann Test Included In Routine Work

Probably the most important advance in the laboratory service during the past year has been the inclusion of Wassermann tests for syphilis in the routine work. Our records show that 3,789 such examinations were performed which gives evidence of the fact that the physicians of the State have been quick to recognize the importance and value of accurate diagnosis in suspected cases of this disease. It appears, however, that this work is of very little practical value to the State as a whole if no further cognizance is taken of the case after the diagnosis is made. Under those circumstances the individual alone benefits as a result of the labor and expense devoted to the examination by the State. In as much as the infection has been contracted by the individual through wilful indiscretion it seems improper that state funds should be expended for his benefit alone. However, the data gathered from these examinations could be made of great value to the State at large through a careful observation and accurate history of the patient subsequent to examination. It is therefore recommended that in the future it be required that physicians submitting specimens of this nature for examination agree to furnish the State Board of Health full and complete information concerning the subsequent treatment and course of all cases positively diagnosed as syphilis by a Wassermann test in our laboratories. It might further be suggested that copies of all positive reports be filed with the county clerk for his information, though, of course, this will avail nothing unless supported by legislative enactments prohibiting the issuing of marriage licenses to persons known to be infected with venereal disease. The same measures might be applied as regards our records of positive examinations of gonorrhoea.

Relative to Subsequent History of Syphilitics After Wassermann Test

The exact number of specimens examined in the various State Board of Health laboratories during the past year, together with the nature of the examinations and the laboratories in which they were performed, is shown in the following tables; and a complete detailed discussion of this service will be found in the reports of the bacteriologists in charge of the several laboratories.

EXAMINATIONS PERFORMED IN THE SEVERAL LABORATORIES OF THE STATE BOARD OF HEALTH DURING 1916

(By Months)

	Jacksonville	Tampa	Pensacola	Miami	Key West	Tallahassee	Total
January	1,431	820	325	270	11	68	2,925
February	1,264	666	274	206	23	*	2,433
March	1,336	690	261	233	17	*	2,537
April	1,036	696	269	205	7	*	2,213
May	1,196	790	254	173	8	*	2,421
June	1,452	677	214	225	10	*	2,578
July	1,495	723	220	200	**	*	2,638
August	1,766	782	327	201	12	*	3.088
September	2,828	765	286	214	18	23	4,134
October	2,386	620	287	213	13	217	3,736
November	2,144	610	322	220	15	542	3,853
December	1,415	608	269	145	14	109	2,560
Totals	19,749	8,447	3,308	2,505	148	959	35,116

* Tallahassee Laboratory closed January 10, 1916 to September 25, 1916.

** Key West Laboratory closed entire month of July, 1916.

SPECIMENS EXAMINED IN ALL STATE BOARD OF HEALTH LABORATORIES DURING 1916

(By Months and Diseases)

	Animal Parasites	Diphtheria	Malaria	Typhoid	Tuberculosis	Gonorrhoea	Wassermann	Other Exam.	Total
January	338	978	348	271	420	154	15	401	2,925
February	361	542	302	277	319	180	63	389	2,433
March	317	341	343	384	374	234	259	285	2,537
April	269	184	336	342	326	230	235	291	2,213
May	351	165	439	430	318	184	230	304	2,421
June	354	132	447	453	294	173	426	299	2,578
July	374	159	507	512	223	181	364	318	2,638
August	469	229	548	543	245	221	507	326	3,088
September	388	1,685	484	439	254	188	414	282	4,134
October	309	1,425	469	399	240	184	398	312	3,736
November	353	1,776	343	287	252	208	400	234	3,853
December	311	466	324	268	262	242	478	209	2,560
Total	4,194	8,082	4,890	4,605	3,527	2,379	3,789	3,650	35,116

DISTRIBUTION OF COMMUNICABLE DISEASES AS DIAGNOSED BY THE LABORATORIES OF THE STATE BOARD OF HEALTH FOR THE YEAR 1916

	Diphtheria	Gonnorrhoea	Malaria	Typhoid	Tuberculosis	Animal Parasites	Rabies	Leprosy	Wassermann	Total
Alachua	..	..	..	2	1	2	..	..	..	5
Altemonte Springs	..	..	1	..	..	..	..	..	..	1
Alton	..	..	..	3	1	1	..	..	..	5
Apalachicola	1	2	..	5	4	..	..	..	..	12
Apopka	2	..	..	1	1	..	..	..	..	4
Arcadia	6	2	..	5	2	..	..	..	..	15
Arran	..	..	..	..	1	..	..	..	..	1
Avon Park	..	1	..	5	2	15	..	..	..	23
Archer	..	..	..	..	..	2	..	..	2	4
Bagdad	..	..	..	..	1	..	..	..	..	1
Baldwin	..	..	..	1	..	..	..	..	..	1
Bartow	3	..	..	4	3	22	..	..	..	32
Bascom	..	..	2	..	..	7	..	..	..	9
Benson	..	..	..	1	..	..	..	..	..	1
Buena Vista	..	..	..	..	3	..	..	..	..	3
Big Bayou	..	..	..	1	..	..	..	..	..	1
Blitchton	..	..	1	1	..	1	..	..	..	3
Bloomingdale	..	..	..	..	..	3	..	..	..	3
Bluff Springs	..	..	..	1	..	..	..	..	..	1
Boardman	..	..	..	..	..	2	..	..	..	2
Boca Grande	..	1	..	..	..	..	..	..	..	1
Bonifay	1	..	..	..	1	..	..	..	..	2
Bowling Green	..	..	..	2	..	5	..	..	..	7
Boynton	2	..	..	..	..	..	..	..	..	2
Bradentown	..	..	..	2	4	16	..	..	2	24
Bradfordville	3	..	..	..	..	..	..	..	..	3
Branford	..	..	..	..	..	1	..	..	..	1
Brewster	..	..	..	..	3	..	..	..	..	3
Bronson	..	..	..	3	..	..	1	..	..	4
Brooker	..	..	..	..	..	12	..	..	..	12
Brooksville	1	4	..	1	2	3	..	..	..	11
Bryceville	..	..	..	..	..	1	..	..	..	1
Bunnell	4	2	1	3	3	2	..	..	..	15
Bushnell	1	..	2	..	1	1	..	..	..	5
Campbellton	..	..	..	..	1	7	..	..	..	8
Campville	..	..	..	..	..	2	..	..	..	2
Canaveral	..	..	..	..	..	2	..	..	..	2
Carrabelle	..	..	1	1	..	..	..	..	..	2
Caryville	..	2	..	..	..	..	..	..	..	2
Cedar Key	..	..	..	..	4	..	1	..	..	5
Center Hill	3	2	..	..	1	5	..	..	..	11
Centerville	1	..	..	..	..	..	..	..	..	1
Centralia	..	1	..	..	..	..	..	..	..	1
Century	..	..	..	4	2	..	..	..	..	6
Chattahoochee	..	..	1	1	1	..	1	..	84	88
Chiefland	1	..	2	3	..	8	..	..	..	14
Chipley	..	..	..	..	1	..	..	..	..	1
Christina	..	..	..	..	1	..	..	..	..	1
Chuluota	..	1	..	..	..	..	..	..	..	1
Citra	..	1	1	7	3	8	..	..	..	20
Clearwater	..	9	4	3	2	..	..	..	..	18
Clermont	..	..	..	..	1	..	..	..	..	1

DISTRIBUTION OF COMMUNICABLE DISEASES AS DIAGNOSED BY THE LABORATORIES OF THE STATE BOARD OF HEALTH FOR THE YEAR 1916—Continued

	Diphtheria	Gonnorrhoea	Malaria	Typhoid	Tuberculosis	Animal Parasites	Rabies	Leprosy	Wassermann	Total
Cocoa	1	..	..	..	1	..	..	..	..	2
Cocoanut Grove	..	..	..	..	2	1	..	..	..	3
Coleman	..	..	..	2	..	..	..	..	..	2
Columbia	..	..	..	4	..	..	..	..	..	4
Cottage Hill	..	..	..	..	..	1	..	..	..	1
Crescent City	..	..	1	1	..	..	..	..	..	2
Crestview	..	..	..	..	..	1	..	..	..	1
Crystal River	..	..	..	..	1	..	..	..	..	1
Cypress	..	..	..	..	..	1	..	..	..	1
Dade City	..	..	..	3	..	..	1	..	..	4
Daytona	4	2	..	10	4	1	..	..	..	21
Daytona Beach	..	..	..	..	1	..	..	..	..	1
Deerfield	..	..	..	..	1	..	..	..	..	1
Deer Park	..	..	1	..	..	2	..	..	..	3
DeFuniak Springs	..	..	4	2	2	7	..	..	..	15
DeLand	..	..	..	..	6	1	..	..	..	7
Delray	7	..	..	..	3	..	..	..	..	10
Douglas	..	..	..	..	..	1	..	..	..	1
Dowling Park	..	..	..	1	..	..	..	..	..	1
Dunnellon	1	..	..	..	1	5	..	..	..	7
East Palatka	..	..	..	..	..	1	..	..	..	1
Eau Gallie	..	..	..	..	..	1	..	..	..	1
Ellenton	..	..	..	1	..	1	..	..	..	2
Eustis	..	..	..	..	..	2	..	..	..	2
Evinston	..	..	..	..	..	3	..	..	..	3
Favoretta	2	..	..	..	..	..	..	..	..	2
Fellsmere	..	1	..	1	3	5	..	..	..	10
Fernandina	2	3	..	2	..	4	..	..	2	13
Florahome	..	..	..	..	..	1	..	..	..	1
Frost Proof	..	..	..	..	..	5	..	..	..	5
Fort Barrancas	..	..	..	..	2	..	..	..	..	2
Ft. Dade	..	..	..	1	..	..	..	..	..	1
Fort Green	..	..	..	..	..	1	..	..	..	1
Fort Lauderdale	5	1	..	2	..	..	..	..	1	9
Fort Meade	1	1	4	6	1	5	..	..	..	18
Fort Myers	..	..	..	3	6	3	..	..	3	15
Fort Ogden	1	..	1	..	..	1	..	..	..	3
Fort Pierce	2	2	2	3	6	4	..	..	..	19
Fort White	..	..	..	..	..	1	..	..	..	1
Gainesville	24	3	2	10	5	10	..	..	..	54
Gardner	..	..	..	1	..	7	..	..	..	8
Gifford	..	..	..	..	..	2	..	..	..	2
Goulding	..	..	..	..	1	..	..	..	..	1
Graceville	..	..	..	..	..	13	..	..	..	13
Grandin	..	..	1	..	..	13	..	..	..	14
Greensboro	..	..	..	1	..	2	..	..	..	3
Green Cove Springs	..	..	..	1	1	5	..	..	..	7
Greenville	..	..	..	1	..	..	1	..	..	2
Gretna	..	..	..	..	..	1	..	..	..	1
Gulfpoint	..	..	1	..	..	..	..	..	..	1
Hallandale	4	1	..	..	..	..	..	..	..	5
Hastings	..	..	..	..	1	1	..	..	..	2

DISTRIBUTION OF COMMUNICABLE DISEASES AS DIAGNOSED BY THE LABORATORIES OF THE STATE BOARD OF HEALTH FOR THE YEAR 1916—Continued

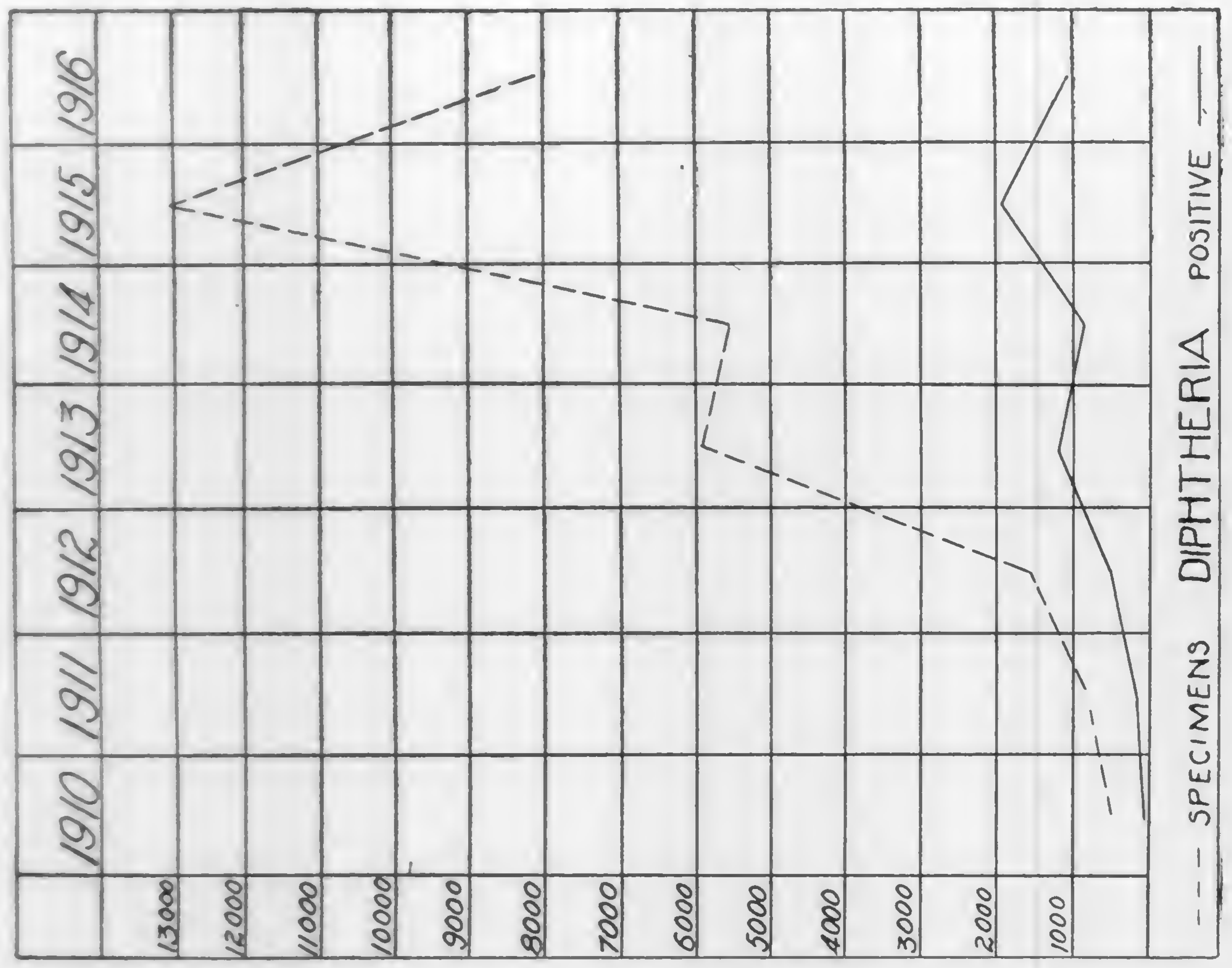
	Diphtheria	Gonnorrhoea	Malaria	Typhoid	Tuberculosis	Animal Parasites	Rabies	Leprosy	Wassermann	Total
Havana	..	..	..	1	1	12	1	..	..	15
Hawthorn	1	..	1	1	..	3	..	..	..	6
Hawks Park	..	..	..	..	..	1	..	..	..	1
Hernando	1	..	..	..	..	2	..	..	..	3
High Springs	1	..	..	..	..	..	..	..	..	1
Hilliard	..	..	..	3	..	5	..	..	..	8
Holt	..	..	..	..	..	..	1	..	..	1
Homestead	..	..	..	2	..	..	..	..	..	2
Interlachen	2	..	..	..	1	..	..	..	..	3
Inverness	..	..	2	..	..	..	1	..	..	3
Jacksonville	509	242	41	82	184	238	14	..	810	2,120
South Jacksonville	23	2	..	2	1	5	..	..	..	33
Jasper	3	..	5	6	5	4	..	..	..	23
Jay	..	..	..	3	..	1	..	..	..	4
Kathleen	..	..	..	..	1	..	..	..	..	1
Kenansville	..	..	..	..	..	1	..	..	..	1
Kendall	..	..	..	1	..	..	..	..	..	1
Key West	4	6	2	4	6	1	..	4	9	36
Kings Ferry	..	..	..	..	1	..	..	..	..	1
Kissimmee	8	..	..	..	..	8	..	..	2	18
Lake Butler	1	..	..	5	2	11	..	..	..	19
Lake City	..	..	..	5	3	..	..	..	2	10
Lake Magdalene	1	..	..	..	..	..	..	..	..	1
Lake Worth	1	1	..	..	2	..	..	..	..	4
Labelle	..	..	..	..	1	3	..	..	..	4
Lakeland	1	3	1	5	10	3	..	..	1	24
Lamont	..	..	1	..	..	..	3	..	..	4
Larkins	..	..	..	..	1	..	..	..	..	1
Largo	..	3	..	..	1	3	..	..	..	7
Laurel	..	..	..	..	..	4	..	..	..	4
Laurel Hill	..	1	5	1	..	..	..	..	..	7
Leesburg	6	..	2	6	5	13	..	..	..	32
Lemon City	..	..	..	..	1	..	..	..	..	1
Little River	..	..	..	..	..	1	..	..	..	1
Live Oak	3	4	2	8	4	10	..	..	1	32
Lloyd	..	..	..	1	..	..	..	..	..	1
Longwood	..	..	..	..	..	16	..	..	..	16
Loughman	..	..	..	..	1	..	..	..	..	1
Loughridge	1	..	..	..	..	..	..	..	..	1
Lulu	..	..	1	..	..	6	..	..	..	7
Lutz Junction	..	..	..	..	1	..	..	..	..	1
Lynn Haven	..	..	..	..	1	..	..	..	..	1
McAlpine	..	..	..	..	..	4	..	..	..	4
Macclenny	..	..	..	..	1	..	..	..	..	1
McDavid	..	..	..	5	..	..	..	..	..	5
McIntosh	1	..	..	..	..	..	..	..	..	1
Madison	..	..	1	1	4	5	..	..	..	11
Maitland	..	..	..	..	..	4	..	..	..	4
Malone	..	..	..	..	1	1	..	..	..	2
Manatee	..	..	..	2	1	5	..	..	..	8
Mandarin	..	2	1	2	1	17	..	..	..	23
Marianna	..	..	..	3	1	..	..	..	..	4

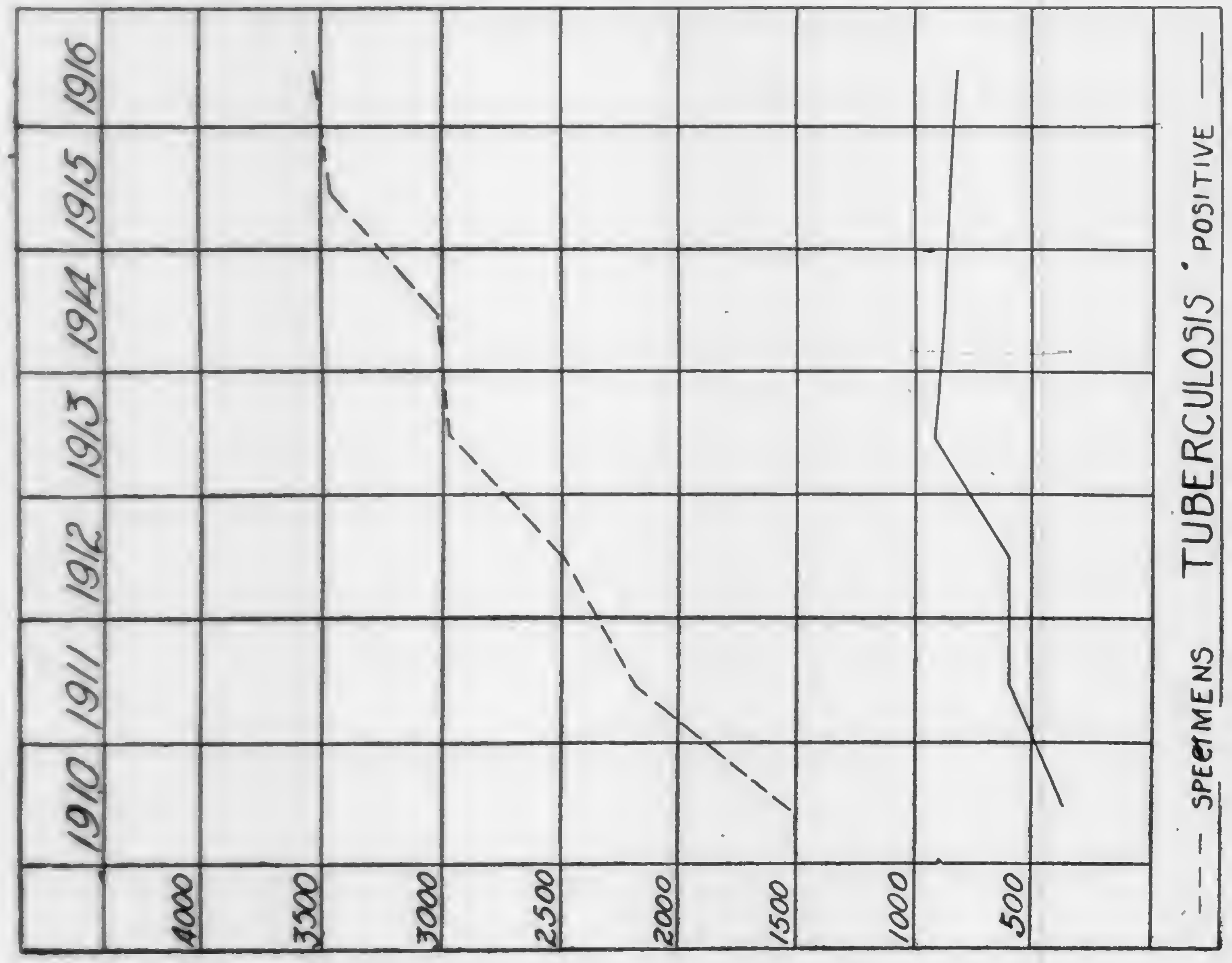
DISTRIBUTION OF COMMUNICABLE DISEASES AS DIAGNOSED BY THE LABORATORIES OF THE STATE BOARD OF HEALTH FOR THE YEAR 1916—Continued

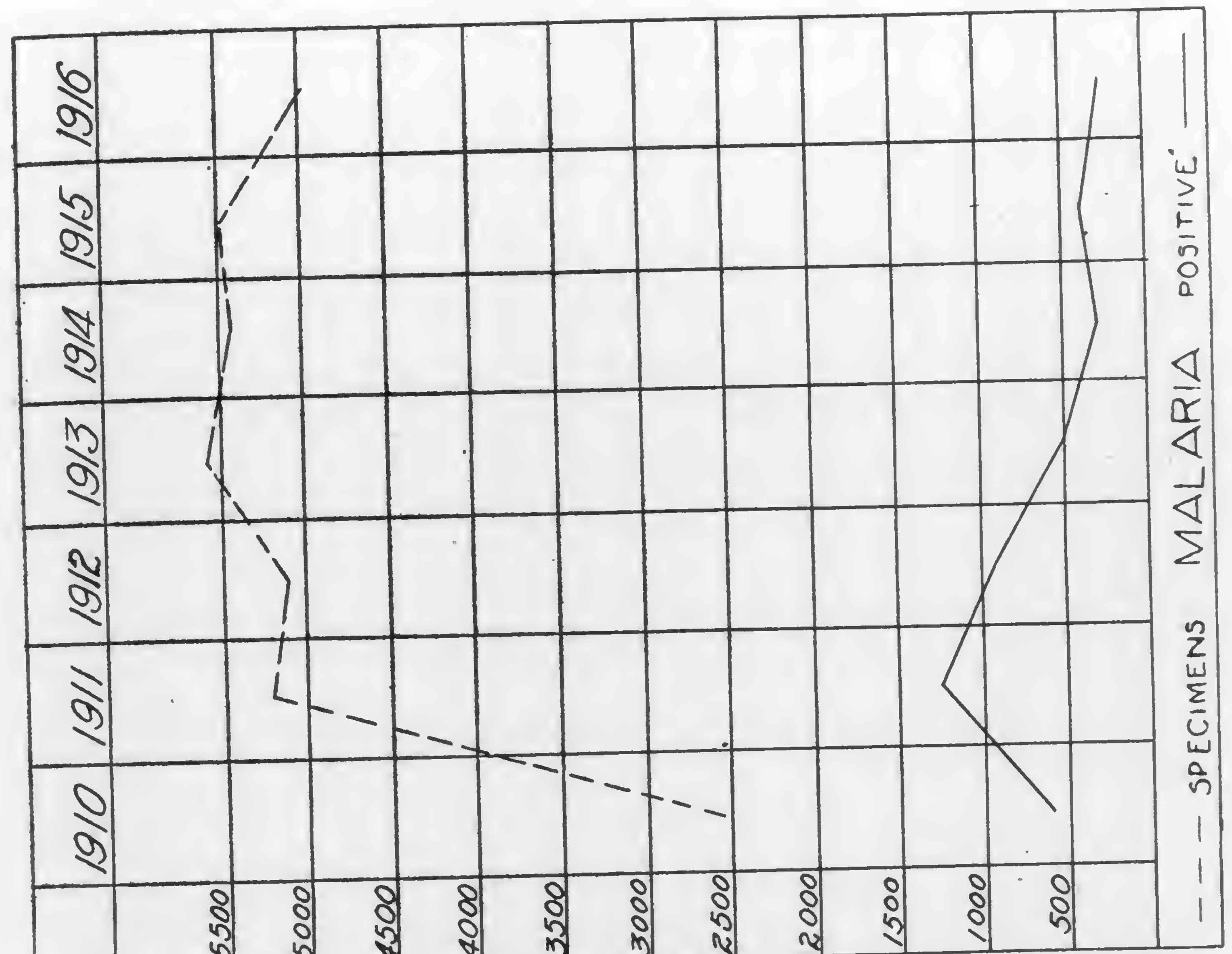
	Diphtheria	Gonnorrhoea	Malaria	Typhoid	Tuberculosis	Animal Parasites	Rabies	Leprosy	Wassermann	Total
Mary Esther	..	..	..	..	..	2	..	..	..	2
Mayo	..	..	..	1	..	13	..	..	..	14
Melbourne	..	2	3	..	..	10	..	..	..	15
Melrose	1	..	..	..	1	2	..	..	..	4
Miami	5	38	8	19	24	11	..	..	20	125
Micanopy	..	1	..	1	..	4	..	..	..	6
Miccosukee	..	..	..	..	1	11	..	..	..	12
Milligan	..	..	..	..	..	1	..	..	..	1
Millville	..	..	..	1	..	2	..	..	..	3
Milton	1	4	..	1	1	4	..	..	1	12
Monticello	59	..	..	1	1	9	1	..	..	71
Morriston	..	..	..	..	1	1	..	..	..	2
Mount Dora	..	..	..	1	2	1	..	..	..	4
Mulberry	2	..	1	1	..	2	..	..	4	10
Munson	..	..	..	1	..	..	..	..	..	1
Muscogee	..	..	..	1	..	..	..	..	..	1
Newberry	..	..	..	..	..	1	..	..	..	1
New Smyrna	1	5	..	3	2	16	2	..	..	29
Nichols	..	..	..	..	3	..	..	..	1	4
Nocatee	..	..	..	..	4	..	..	..	..	4
Noma	..	..	..	2	..	..	..	..	..	2
O'Brien	..	..	..	1	..	..	..	..	..	1
Ocala	3	..	2	6	7	16	..	..	1	35
Odessa	..	..	..	..	1	..	..	..	..	1
Ojus	..	..	..	..	1	3	..	..	..	4
Okeechobee	..	1	..	..	..	23	..	..	..	24
Okeelanta	..	..	1	..	..	..	..	..	..	1
Oklawaha	3	..	..	..	..	4	..	..	..	7
Oneco	..	..	..	..	..	1	..	..	..	1
Orlando	..	16	7	3	17	41	..	..	1	85
Oxford	..	..	..	..	2	19	..	..	..	21
Ozona	..	1	..	..	..	5	..	..	..	6
Pace	..	..	..	3	..	..	..	..	..	3
Palatka	..	1	..	1	6	6	..	..	1	15
Palmetto	..	..	..	..	2	2	..	..	..	4
Panama City	1	1	..	1	1	1	..	..	..	5
Pensacola	44	206	21	49	87	103	..	..	13	523
Perrine	2	..	..	..	..	..	..	..	1	3
Perry	..	..	1	..	5	5	2	..	..	13
Pine Barren	2	1	..	..	1	6	..	..	..	10
Plant City	8	5	18	10	1	9	..	..	3	54
Pompano	..	..	..	2	2	1	..	..	..	5
Ponce de Leon ..	..	..	..	..	1	..	..	..	..	1
Port St. Joe	2	..	..	..	3	..	..	..	..	5
Princeton	..	..	..	..	..	2	..	..	..	2
Punta Gorda	..	2	..	5	..	..	..	..	..	7
Putnam Hall	..	..	..	..	2	..	..	..	..	2
Quincy	..	6	..	4	5	..	..	..	..	15
Raiford	..	..	..	1	1	..	..	..	..	2
Raleigh	..	..	..	..	..	..	1	..	..	1
Reddick	..	..	..	..	..	..	1	..	..	1
Ritta	..	..	..	..	1	..	..	..	..	1

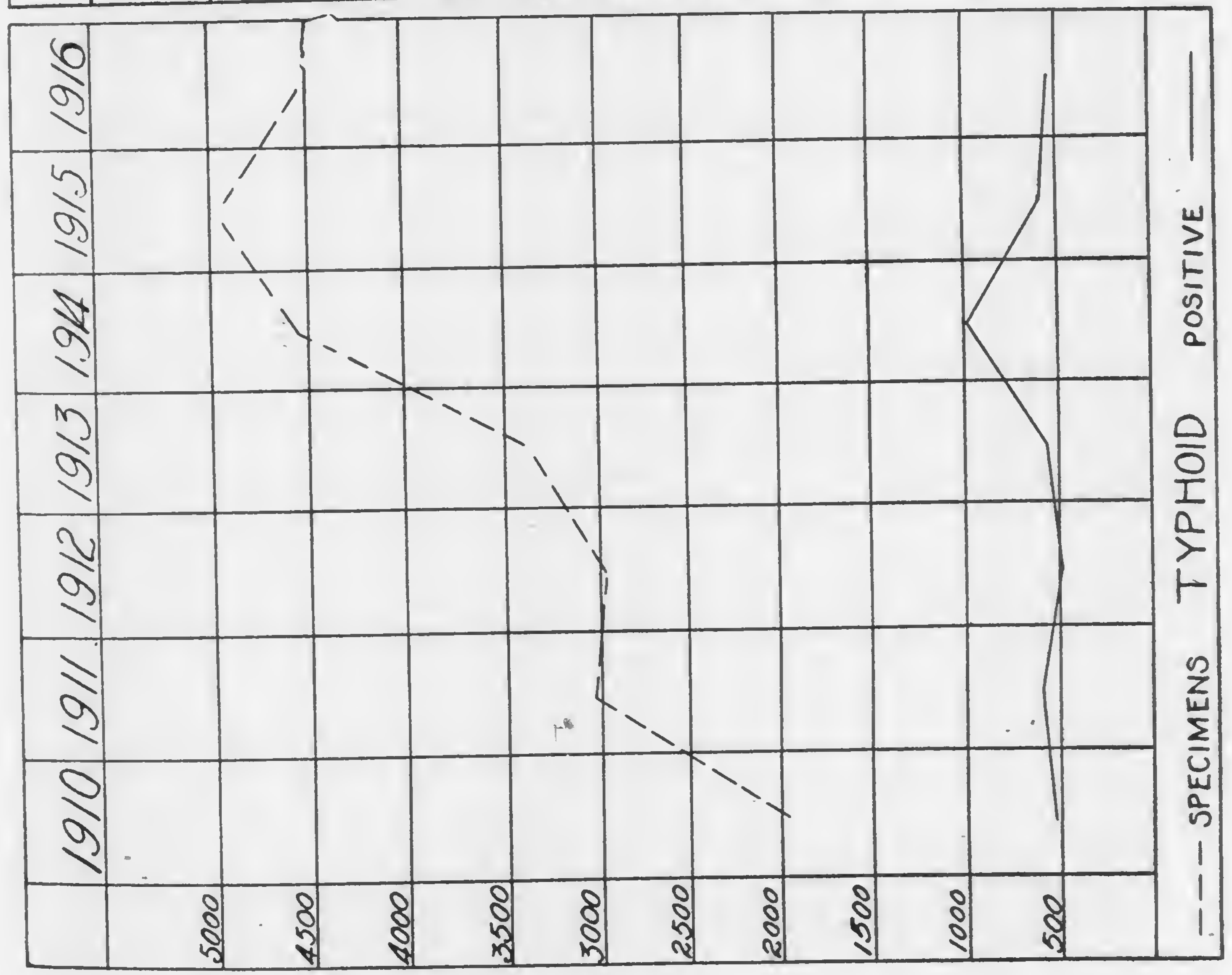
DISTRIBUTION OF COMMUNICABLE DISEASES AS DIAGNOSED BY THE LABORATORIES OF THE STATE BOARD OF HEALTH FOR THE YEAR 1916—Continued

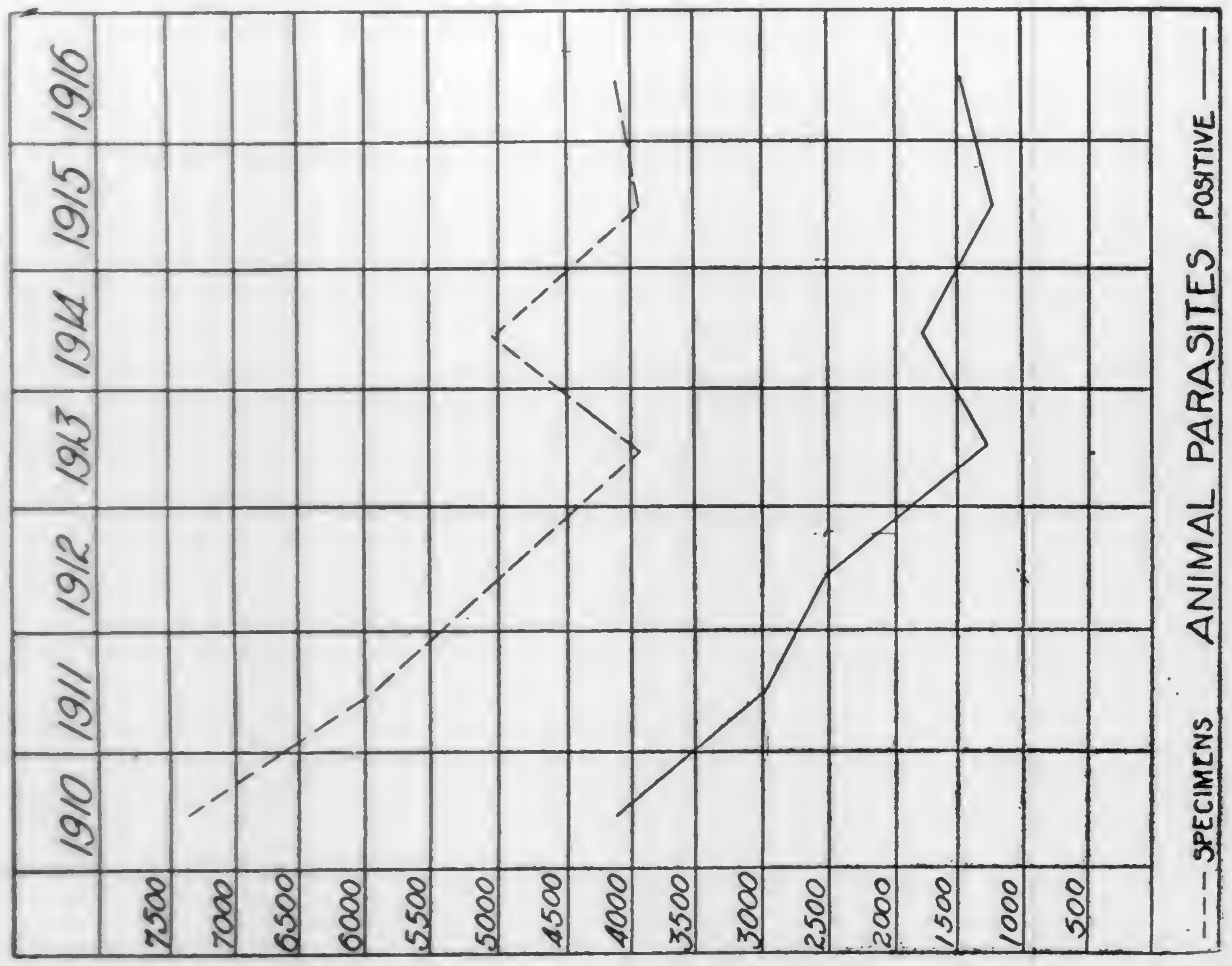
	Diphtheria	Gonnorrhoea	Malaria	Typhoid	Tuberculosis	Animal Parasites	Rabies	Leprosy	Wassermann	Total
River Junction ...	1	4	1	3	1	9	..	..	..	19
Romeo	..	..	..	..	..	1	..	..	..	1
St. Andrews	..	..	..	..	..	1	..	..	..	1
St. Augustine	2	3	..	10	13	13	..	..	..	41
St. Petersburg ...	..	1	..	2	1	17	..	..	..	21
Safety Harbor ...	..	1	..	..	..	..	..	..	..	1
San Antonio	..	..	..	1	15	15	..	..	..	31
Sanderson	..	..	..	..	1	1	..	..	..	2
Sanford	10	7	2	3	7	26	..	1	5	61
Sarasota	1	..	1	..	..	7	..	..	..	9
Sebastian	..	..	..	..	..	9	..	..	..	9
Sebring	1	..	..	..	1	4	..	..	..	6
Seville	..	..	..	..	..	5	..	..	..	5
Sneads	..	..	1	1	..	15	..	..	..	17
Sorrento	..	..	..	..	..	1	..	..	..	1
Springdale	..	..	..	3	..	..	..	..	..	3
Starke	2	..	2	2	2	7	..	..	..	15
Stuart	..	..	..	..	..	1	..	..	..	1
Summerfield	..	..	..	..	..	1	..	..	..	1
Sutherland	..	..	..	..	..	6	..	..	..	6
Tallahassee	33	8	18	10	7	30	2	..	4	112
Tampa	92	127	37	87	112	177	..	..	177	809
West Tampa	..	1	..	1	3	20	..	..	..	25
Tarpon Springs ..	..	4	..	..	1	..	..	..	4	9
Tiger Bay	..	..	..	..	..	1	..	..	..	1
Titusville	40	9	3	1	2	13	2	..	..	70
Torrey	..	..	..	..	..	2	..	..	..	2
Trenton	..	1	..	..	..	..	..	..	..	1
Tropico	..	..	..	2	..	..	..	..	..	2
Umatilla	..	..	..	..	..	1	..	..	..	1
Venice	..	..	..	..	..	1	..	..	..	1
Vernon	..	..	..	..	..	1	..	..	..	1
Watertown	..	..	..	..	..	3	..	..	..	3
Wauchula	4	..	..	10	4	4	..	..	1	23
Webster	..	..	..	..	1	1	..	..	..	2
Weirsdale	..	..	..	..	1	..	..	..	..	1
Wekima	..	..	..	..	..	5	..	..	..	5
Welaka	..	..	..	..	1	..	..	..	..	1
Wellborn	1	..	..	..	1	6	..	..	..	8
West Palm Beach	..	..	2	4	7	..	..	..	5	18
Westville	..	..	..	..	1	..	..	..	..	1
Wewahitchka	..	1	..	..	1	..	..	..	..	2
White Springs ...	..	..	..	..	1	..	..	..	..	1
Wildwood	..	..	..	4	..	..	..	..	..	4
Williston	3	1	..	6	3	18	1	..	1	33
Winter Haven ...	..	1	..	5	2	3	..	..	1	12
Winter Park	..	..	..	..	..	2	..	..	..	2
Worthington	..	..	..	3	1	2	..	..	..	6
Zephyrhills	..	..	..	1	1	2	..	..	..	4
Zolfo	3	..	..	..	2	8	..	..	..	13
Totals	977	765	227	543	719	1,404	37	5	1,163	5,840

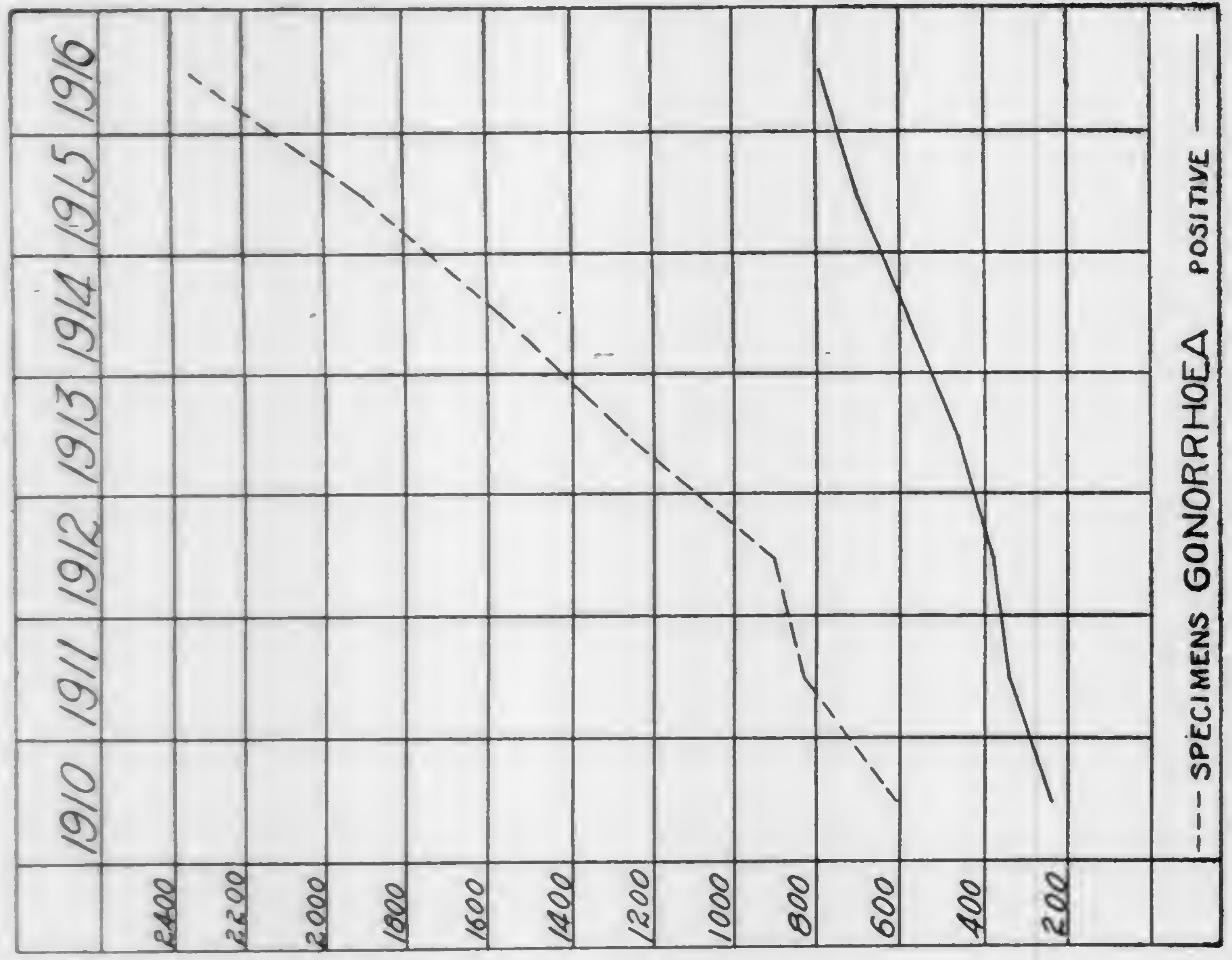

1910
1911
1912
1913
1914
1915
1916
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
--- SPECIMENS DIPHTHERIA POSITIVE ——


1910
1911
1912
1913
1914
1915
1916
4000
3500
3000
2500
2000
1500
1000
500
--- SPECIMENS TUBERCULOSIS POSITIVE ——


1910
1911
1912
1913
1914
1915
1916
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
--- SPECIMENS MALARIA POSITIVE ——


1910
1911
1912
1913
1914
1915
1916
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
--- SPECIMENS TYPHOID POSITIVE ——





TREATMENT OF INDIGENT CRIPPLED CHILDREN

The treatment of indigent crippled children by the State Board of Health, and the correction of such deformities as would in later life seriously interfere with the ability to earn a livelihood, was provided for by an enactment of the legislature of 1909. This work has been continued during the past year with excellent results. This branch of the Board's activities since its beginning has been under the direction of Dr. R. C. Turck, of Jacksonville.

During the past summer Dr. Turck, who holds a commission as Major in the medical corps of the National Guard of Florida, was detailed for active field service in charge of a hospital unit, and was assigned to duty on the Mexican border, thus necessitating the granting of a leave of absence to him, and the appointment of a substitute to take charge of this important work during his absence. Dr. J. K. Simpson, of Jacksonville, was appointed to fill this temporary vacancy and has conducted the work since that time.

A full account of this service will be found in the report of Dr. Simpson.

MEDICAL INSPECTION OF SCHOOL CHILDREN

During the school term 1915-16, an attempt was made to put into effect the provisions of the statute enacted by the legislature of 1915, providing for medical inspection once yearly, of all children attending school, either public or private, within the State of Florida. The faulty construction of this statute has already been commented upon in a previous report; the chief defect being the failure of the legislature to provide special appropriations to carry on this additional work, which in itself, if properly performed under the present law, would necessitate an annual expenditure of approximately $100,000.00.

Another defect which exercises a marked influence upon the effectiveness of the service performed is the provision that appointments be made by the Boards of County Commissioners, rather than by the State Board of Health.

The exceptionally low percentage of defects reported from several counties of the State would seem to admit of considerable doubt as to the accuracy and thoroughness of the examinations. Because of the inability of the State Board of Health to provide from its limited means for adequate compensation of these inspectors, it has been exceedingly difficult to secure the cooperation of the physicians of the State in carrying on the work. The small fee paid (10c per capita) will no more than cover the expenses of the inspectors. This work, in those instances where it has been undertaken has therefore been performed more through an altruistic spirit than through any desire for the remuneration received.

Inspections were undertaken in twenty-four of the fifty-two counties, thirty-eight inspectors being engaged in this service. During the past school term 34,207 children were examined of approximately 200,000 enrolled in our public schools.

There follow certain tabulations of the results of these examinations as reported to this office. Because of the conditions stated above, and previously discussed at length, the State Board of Health does not assume to guarantee the accuracy or correctness of the findings herein reported, but it is believed that in the majority of counties the results reported are approximately in accord with the actual conditions, and it is to be hoped that the beginning which has been made in this important branch of public health work will serve to impress upon our legislators the necessity for making some adequate provision whereby the medical inspection of school children may be undertaken upon a more satisfactory basis.

County	No. of Inspectors Reporting	No. Schools Inspected	No. Children Examined			No. Defective			Per Cent. Defective		
			Total	White	Colored	Total	White	Colored	Total	White	Colored
Alachua	2	45	2,394	1,752	642	1,534	1,193	341	64.7	68.0	53.1
Baker	1	22	722	722	...	376	376	...	52.0	52.0	....
Broward	1	12	751	640	111	380	322	58	50.6	50.3	52.2
Calhoun	1	28	1,094	1,004	90	76	58	18	6.9	5.7	20.0
DeSoto	2	22	1,798	1,798	...	1,324	1,324	...	73.6	73.6	....
Escambia	2	8	1,739	1,739	...	1,247	1,247	...	71.7	71.7	....
Gadsden	2	18	1,474	1,388	86	1,145	1,070	75	77.6	77.0	87.2
Hernando	1	23	765	558	207	534	407	127	69.8	72.9	61.3
Hillsborough	2	6	927	927	...	778	778	...	83.9	83.9	....
Jefferson	2	55	2,331	2,229	102	1,629	1,534	95	69.8	68.8	93.1
Lafayette	1	5	277	277	...	231	231	...	83.4	83.4	....
Lake	1	15	1,127	1,127	...	530	530	...	47.0	47.0	....
Levy	1	58	1,821	1,301	520	1,032	790	242	56.6	60.7	46.7
Liberty	1	14	608	608	...	317	317	...	52.1	52.1	....
Manatee	2	18	1,654	1,416	238	945	815	130	57.0	57.5	54.6
Marion	2	40	1,346	1,297	49	1,215	1,166	49	90.2	89.8	100.0
Nassau	1	27	778	308	470	540	235	305	69.4	76.2	64.8
Okaloosa	1	35	1,209	1,098	111	312	284	28	25.8	25.8	25.2
Pinellas	4	25	2,655	2,579	76	1,657	1,652	5	62.4	64.0	6.5
Polk	3	31	2,848	2,416	432	1,142	1,056	86	40.0	43.7	19.9
St. Johns	1	34	1,958	1,345	613	139	107	32	7.0	7.9	5.2
Santa Rosa	1	30	953	953	...	871	871	...	91.3	91.3	....
Seminole	1	7	959	613	346	809	522	287	84.3	85.1	82.9
Sumter	2	36	2,019	1,747	272	877	804	73	43.4	46.0	26.8
24...........	38	614	34,207	29,842	4,365	19,640	17,689	1,951	57.4	59.2	44.6

CONCLUSION

In the foregoing report an attempt has been made to outline, as concisely as possible the more important activities of the Bureau of Communicable Diseases, during 1916, and in so doing certain suggestions have been offered which, if effected would probably increase the efficiency of the service and its ultimate value to the State.

These recommendations and the entire report, together with the attached reports of the heads of the various divisions of this Bureau, are submitted for your careful consideration.

Respectfully submitted,

C. H. DOBBS,

Chief, Bureau Communicable Diseases.

MEDICAL INSPECTION OF SCHOOL CHILDREN

COUNTY	No. of Inspectors Reporting	No. of Schools Inspected	Percent of Children Defective	Number Examined	Number Defective	Number of Defects	Vaccination	Faulty Nutrition	Anemia	Enlarged Glands	Nervous Diseases	Cardiac Diseases	Pulmonary Diseases	Skin Diseases	Orthopaedic Defect	Defective Vision	Defective Hearing	Defective Nasal Breathing	Defective Palate	Defective Teeth	Hernia	Hypertrophied Tonsils	Adenoids	Conjunctivitis	Hookworm Disease	Pediculosis	Defective Mentality	Bad Conduct	Effort Lacking	Proficiency Lacking	Treatment Necessary	Communicable Diseases
Alachua	2	45	64.7	2,394	1,534	2,682	715	154	139	16	2	0	0	14	10	185	68	21	9	361	2	668	478	121	213	4	119	77	84	102	1,254	89
Baker	1	22	52.0	722	376	460	42	294	107	79	2	0	0	18	8	96	2	5	4	37	1	214	9	0	118	0	213	6	2	0	272	2
Broward	1	12	50.6	751	380	993	138	32	18	8	14	2	3	17	4	50	1	23	4	354	0	240	63	0	31	1	28	0	0	0	370	0
Calhoun	1	28	6.9	1,094	76	95	17	2	1	0	0	0	1	0	0	14	0	0	0	25	0	8	14	0	7	0	9	5	3	3	*	0
DeSoto	2	22	73.6	1,798	1,324	1,836	12	20	15	10	4	1	0	12	11	137	8	35	6	682	0	46	29	33	690	40	11	5	10	17	*	4
Escambia	2	8	71.7	1,739	1,247	2,639	677	55	226	189	8	62	9	24	23	141	15	32	6	1,028	9	480	57	2	105	11	60	19	77	36	1,208	22
Gadsden	2	18	77.6	1,474	1,145	2,287	174	56	457	95	4	9	13	5	2	88	9	16	3	424	1	307	163	13	736	0	8	4	31	2	923	5
Hernando	1	23	69.8	765	534	856	584	24	64	7	1	1	2	6	7	120	6	27	0	386	0	170	58	5	71	5	5	0	12	2	*	0
Hillsborough	2	6	83.9	927	778	2,724	215	281	286	21	7	2	1	10	2	197	14	131	10	452	5	311	355	153	327	0	28	25	55	58	42	0
Jefferson	2	55	69.8	2,331	1,629	3,192	388	580	356	10	19	2	1	55	17	333	52	29	25	813	4	269	27	19	981	62	272	153	130	157	1,718	35
Lafayette	1	5	83.4	277	231	699	67	62	115	53	6	0	0	11	2	73	5	22	1	140	0	81	17	38	66	7	9	36	54	57	224	0
Lake	1	15	47.0	1,127	530	143	237	47	96	34	1	2	8	8	2	47	16	107	24	198	0	156	133	5	235	0	17	9	10	16	*	4
Levy	1	58	56.6	1,821	1,032	1,806	442	236	236	61	8	0	5	12	4	102	1	260	4	734	0	501	285	171	566	22	8	1	35	0	1,032	3
Liberty	1	14	52.1	608	317	666	193	61	57	0	0	0	0	0	1	18	11	8	5	396	3	9	4	0	85	0	0	0	7	8	84	0
Manatee	2	18	57.0	1,654	945	1,507	307	40	58	50	4	8	0	3	2	16	4	10	0	560	1	210	21	167	71	7	67	60	92	107	770	0
Marion	2	40	90.2	1,346	1,215	3,456	144	44	409	323	5	22	22	7	63	259	25	56	12	394	5	598	257	59	643	16	27	9	0	0	*	9
Nassau	1	27	69.4	778	540	794	349	138	131	0	0	3	1	4	3	52	5	40	0	409	0	114	85	0	109	0	21	0	2	0	540	3
Okaloosa	1	35	25.8	1,209	312	383	2	22	29	7	2	0	1	0	2	20	3	6	0	83	0	138	15	2	33	10	82	59	78	97	264	1
Pinellas	4	25	62.4	2,655	1,657	1,785	329	87	109	748	13	14	2	29	16	616	93	308	14	959	4	809	388	438	169	6	73	63	83	134	201	0
Polk	3	31	40.0	2,848	1,142	2,878	394	263	121	17	8	12	15	21	12	286	31	104	2	625	5	298	227	60	564	11	49	26	117	127	879	11
St. Johns	1	34	7.0	1,958	139	833	263	146	168	4	6	10	8	37	1	47	2	15	1	107	1	230	170	93	531	0	127	24	121	112	643	0
Santa Rosa	1	30	91.3	953	871	2,312	20	0	76	3	1	0	0	4	2	121	3	2	0	621	1	352	175	2	502	1	70	69	141	145	*	0
Seminole	1	7	84.3	959	809	1,518	243	29	45	44	4	8	2	7	0	53	4	1	0	371	0	292	141	112	514	0	0	0	0	0	*	6
Sumter	2	36	43.4	2,019	877	1,074	314	108	96	22	9	6	2	13	5	81	8	20	5	404	5	43	30	3	149	0	13	2	9	16	758	0
Totals	38	614	57.4	34,207	19,640	37,618	6,266	2,781	3,415	1,801	128	164	96	317	199	3,152	386	1,278	135	10,563	47	6,544	3,201	1,496	7,516	203	1,316	652	1,153	1,196	11,182	194

* Not reported.

REPORT OF DR. CHAS. W. BARTLETT,

Assistant to the State Health Officer, West Coast District

Tampa, Fla., February 13th, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of the Bureau of Communicable Diseases.)

Dear Doctor Porter:

The Southwestern District under my supervision for this year comprised, in the first nine months, Hillsborough, Polk, Lee, Pinellas, DeSoto and Manatee, and the latter part of the year DeSoto and Lee were transferred to the Central District and Pasco and Hernando were both added to this district.

The general health of this district has been, as in previous years, good and the main work of the office has been in connection with the sanitation and abatement of nuisance, and also the enforcement of the act of the Legislature enforcing the screening of fruits, vegetables and all eatables exposed for sale, and the enforcement also of screening of open closets in rural schools.

Regular monthly trips were carried out through the different counties and as many schools as possible visited, and written requests made to the trustees of the schools for enforcement of the law requiring screening. At several places photographs of the present condition of the school was made and prints of the photographs and of the State Law furnished to the trustees of the school. When an opportunity was had in these monthly trips, a short talk was given to the school children in reference to hookworm and fly infection.

As in previous years, we have also attended to the answering of all letters with reference to pellagra, hookworm, malaria and other information of the same character from time to time by different persons residing in this district.

Investigation of infectious and contagious diseases were also made, taking each reported in our district and making special trip for their investigation, and those reported for this year have been diphtheria, scarlet fever, poliomyelitis and smallpox. After comparing the number of smallpox cases in the present year we feel gratified in reporting that we have had only 19 cases of smallpox under our care against 54 cases for the previous year, of which 17 were taken to the Isolation Hospital and two treated outside.

The case of lepra at the Isolation Hospital is still under our care and it seems to have somewhat improved as to physical condition.

A description of the particular work by counties is as follows:

In Hillsborough County we had to deal with a less number of cases of smallpox than for a good many years. The city of Tampa proper only furnishing six cases while in the outside district (in the county) twelve cases were found. Out of the six cases from the city of Tampa, one was found in January and five were found in the month of April. The largest number outside the city was in the month of March in which there were 8 cases. and one case each in the months of January, June. August and November.

As the number of cases of smallpox was not very large and application for vaccine was small, only a few applying for this protection.

Diphtheria has prevailed throughout the whole year. We have received reports from 123 cases in the county, of which 92 were within the city of Tampa. There have been more applications for free antitoxin than in previous years and due to the fact of the National Vaccine Company having contracted with the State to furnish the district druggists with antitoxin and their failure to do so, due to the lack of material, has been the result of considerable trouble to the physicians applying for antitoxin for their indigent patients and, therefore, the serum has been furnished by the druggists from other manufacturers.

Scarlet fever has prevailed in greater number than previous years with the exception of 1898 and no less than 93 cases have been reported to this office, and there has not been a single month in the whole year that a case was not reported. Of the 93 cases 54 of them were in the city of Tampa and the other 39 in different sections of the county.

As to cases of typhoid fever reported for the year, there has been a slight increase over previous years. We had 140 cases against 114 for the previous year.

Very few cases of pellagra have been reported directly to this office from this county. We had a case reported at Wimauma which was investigated and report made to the main office.

The health condition of Polk County has been good throughout the year and no contagious or infectious diseases reported to this office, and our work has consisted mainly in the monthly trips of inspection, the enforcing of the screening law on open closets in rural schools, also, interviews with the City Health Officer and clerks of the City Council with reference to enactment of ordinance similar to the State law in reference to screen law.

The work of Pinellas County has also been simply that of inspection and making monthly trips, conference with physicians and mayors of the different towns and also special trip made at the request of the mayor of Dunedin with reference to Imhoff tank and special trip to Tarpon Springs, Clearwater and Largo in reference to trachoma, of which special report was made.

In Bradentown there were a few cases of scarletina during the year, and one suspected case of poliomyelitis was reported from this district, and also an epidemic of chickenpox in the cities of Bradentown and Manatee, also case of pellagra was reported from Oak Knoll which was investigated and report made.

Very few reports have come from DeSoto County, only 20 cases of typhoid fever, three cases of diphtheria and one case of malaria being reported.

The health condition of Lee County has been good, if we are to judge from the reports that have come in, there being only four cases of typhoid fever reported. We made an address to the High School at Ft. Myers on the question of health matter.

Due to the fact that no reports have been sent to me from the physicians from Hernando and Pasco, and as these counties have only been under my care for the last three months, I have had no definite information and, therefore, I cannot make a report from these counties.

I also wish to submit the work done in Hillsborough County in regard to fumigation, inspections, etc., during the year 1916, for this district.

Respectfully submitted,
CHAS. WM. BARTLETT,
Assistant to the State Health Officer.

INSPECTION BY SANITARY PATROLMAN, TAMPA, FOR THE YEAR ENDED DECEMBER 31, 1916

Purpose of Inspection	Where Made		Total Number of Inspections Made During Month
Screening Law:	Hotels		1
	Boarding Houses		46
	Restaurants		39
	Lunch Counters		12
	Dining Rooms		19
	Dining or Buffet Cars		74
	Kitchens		58
	Meat Shops		21
	Butcher Shops		35
	Grocery Stores		120
	Bakeries		30
	Fruit Stands		94
	Candy Wagons		10
	Fruit Peddlers		85
	Oyster House		1
Surface Closet and Water Carriage Laws:	Private Residences, etc.		308
	Cigar Factories		73
	Miscellaneous		80
Sanitary Nuisance Laws:	Boats (steamers) from N. Y.		20
	Trains from N. Y.		180
	Isolation Hospital visits		115
			Fumigations, Releases, etc.
Communicable Diseases:	Smallpox	18	18
	Typhoid Fever	39	
	Tuberculosis	25	33
	Scarlet Fever	46	39
	Diphtheria	123	90
	Rabies	5	

REPORT OF DR. C. W. D'ALEMBERTE,

Assistant to the State Health Officer, Western District

PENSACOLA, FLA., January 1st, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of Bureau of Communicable Diseases.)

DEAR DOCTOR:

The enclosed is my annual report of this office for the year 1916.

I am submitting it to you in compliance with instructions received from Doctor Joseph Y. Porter, State Health Officer, on December 21st, 1916.

Yours very truly,
C. W. D'ALEMBERTE,
Assistant to the State Health Officer.

January 1916:
  Scarlet Fever—Seven (7) cases.* Four under U. S. Authorities at Naval Reservation.
  Tuberculosis—Nine (9) cases. (Two deaths).
  Cerebro-meningitis. One (1) case. **This case in County.
  Typhoid Fever—Five (5) cases.
  Smallpox. Two (2) cases.
February 1916:
  Scarlet Fever—Three (3) cases.
  Tuberculosis—Eight (8) cases. (Five deaths).
  Typhoid Fever—Eleven (11) cases. (Five deaths).
March 1916:
  Tuberculosis—Eight (8) cases. (One death).
  Typhoid Fever—Thirteen (13) cases. (Three deaths).
  Diphtheria—One (1) case.
April 1916:
  Tuberculosis—Nine (9) cases. (Five deaths).
  Typhoid Fever—Four (4) cases.
May 1916:
  Tuberculosis—Eleven (11) cases. (Four deaths).
  Typhoid Fever—Four (4) cases. (One death).
June 1916:
  Tuberculosis—Four (4) cases. (Two deaths).
  Typhoid Fever—Two (2) cases.
July 1916:
  Tuberculosis—Four (4) cases.
  Typhoid Fever—Four (4) cases. (One death).
August 1916:
  Tuberculosis—Three (3) cases. (Two deaths).
  Typhoid Fever—Five (5) cases.

September 1916:
  Tuberculosis—Six (6) cases. (Four deaths).
  Typhoid Fever—Nine (9) cases.
October 1916:
  Tuberculosis—Five (5) cases. (One death).
  Typhoid Fever—Four (4) cases.
  Diphtheria—Five (5) cases.
  Malarial Fever—One (1) case.
November 1916:
  Scarlet Fever—Two (2) cases.
  Tuberculosis—Three (3) cases. (Two deaths).
  Typhoid Fever—Four (4) cases.
  Diphtheria—Six (6) cases.
  Malarial Fever—One (1) case.
December 1916:
  Scarlet Fever—Three (3) cases.
  Tuberculosis—Three (3) cases. (One death).
  Diphtheria—Two (2) cases.
  Malarial Fever—One (1) case.

FUMIGATIONS DURING THE YEAR

January 1916:
  Scarlet Fever, three. Cerebro-meningitis, one. Tuberculosis, two. Smallpox, two.
February 1916:
  Scarlet Fever, six. Tuberculosis, six. Typhoid Fever, two.
March 1916:
  Tuberculosis, one. Diphtheria, one.
April 1916:
  Tuberculosis, five.
May 1916:
  Tuberculosis, four. Typhoid fever, one.
June 1916:
  Tuberculosis, three.
July 1916:
  Tuberculosis, three.
August 1916:
  Tuberculosis, two.
September, 1916:
  Tuberculosis, four.
October 1916:
  Tuberculosis, two. Diphtheria, five.
November 1916:
  Tuberculosis, two. Diphtheria, four. Scarlet fever, two.
December 1916:
  Tuberculosis, two. Diphtheria, one. Scarlet fever, one.

INSPECTIONS OF THE SCREENING LAW BY PATRONS

January 1916:
  Nineteen (19) inspections. Thirteen abatements ordered.
February 1916:
  Thirty-three (33) inspections. Thirty-three abatements ordered.
March 1916:
  Thirty-four (34) inspections. Thirty-two abatements ordered.
April 1916:
  Thirty-five (35) inspections. Twenty-nine abatements ordered.***
May 1916:
  Forty-nine (49) inspections. Twenty-five abatements ordered.

June 1916:
  Eighteen (18) inspections. Sixteen abatements ordered.***
July 1916:
  Thirty-five (35) inspections. Twenty-eight abatements ordered.***
August 1916:
  Twenty-two (22) inspections. Twenty abatements ordered.***
September, 1916:
  Twenty (20) inspections. Twenty abatements ordered.
October 1916:
  Thirty-six (36) inspections. Twenty-three abatements ordered.
November 1916:
  Twenty-three (23) inspections. Eighteen abatements ordered.
December 1916:
  Thirty-six (36) inspections. Twenty-two abatements ordered.

***In these months there was inspected four hog pens in city and ordered moved. Also the abatement of the city dumping garbage in open lot in city.

	Total Cases Reported	Total Deaths	Total Inspections
Scarlet fever	15		360
Tuberculosis	73	29	
Cerebro-meningitis	1	1	
Typhoid fever	46	6	
Smallpox	2		
Diphtheria	14		
Malarial Fever	3		

Total number fumigations	65
Total abatements ordered	277
Total number of certificates for transportation of corpse for year	83

REPORT OF DR. J. Y. PORTER, JR.,

Assistant to the State Health Officer, South East Coast District

KEY WEST, FLA., February 1, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of Bureau of Communicable Diseases.)

DEAR DOCTOR:

I beg to submit the following report as your assistant for the South East Coast District for the past year:

In 1917 health conditions prevailing throughout the district have been practically the same as in the preceding year. Sanitary conditions have been improved, and as greater interest is now manifested in this subject, is hoped that in the coming year the communities which are not now required by law to carry out certain definite sanitary reforms, will see the wisdom of such laws and of their own volition avail themselves of such protection.

In this district the first and foremost problem of importance for the sanitarian, is the disposition of human excreta. Unfortunately, with the exception of some of the larger cities, this is accomplished by means of unsanitary privies, of which the surface and pit are the main types. As incorporated towns and cities are now required by State law, where no sewerage system is in operation, to have all toilets comply with the rules and regulations of the State Board of Health, this matter has been taken up with the proper officials of such cities and an effort made to get their city councils to enact these rules and regulations as local ordinances. In this event there is apt to be a more general compliance, and violators can be prosecuted in the city courts, by city officials, and at less costs than in the criminal courts when prosecuted by county solicitors.

Accordingly on inspection trips work has been mainly along these lines: all types of toilets have been met with, ranging from one community on the Florida Keys that had no toilets and where the nearby brush furnished the necessary privacy for the calls of nature, to the most sanitary, fly-proof type of surface toilet. As stated, the vast majority, outside of the larger cities of the surface, open back type, of free access to flies and the chickens which act as local scavangers. In addition, these toilets are the main factor in the constant soil pollution from hookworm. It is realized that it is through these toilets, with the common house fly, that the present morbidity and mortality rates of the intestinal diseases are kept at their present mark; and the present sacrifice of human life, especially in the young, will continue until these nuisances are abated.

Typhoid fever prevails to a greater extent than it should. The surface toilet and fly go hand in hand in the transmission of this disease, possibly aided to a slight extent by a polluted water supply. In one city in this district, namely Key West, it can be predicted, almost to a certainty, that there will be a visitation by typhoid each spring, preceded by slight epidemics of dysentery. This condition is a result of diminishing water supply, which supply consists of rain water stored in underground cisterns, and oftentimes in close proximity to pit privies—and aided by bad privies and flies. From Florida City up the east coast through the entire district, the water supply is from wells sunk to various depths, and from various tests, is uniformly bad—this no doubt due to the underground formation of rotten cavernous limestone. How much typhoid and other intestinal diseases is transmitted through the agency of this water, is a matter of conjecture. In only a few instances, in the cities, is the water subjected to any preliminary treatment before being turned into the mains.

During the past year your assistant, in the city of Key West, administered 1,125 injections of typhoid vaccine to the indigent, mainly children.

It is thought that in this district the subject of carriers is a most important one; at the beginning of winter there is a great influx of visitors from the North, and it is just at this time that infantile dysentery makes its appearance. It is only reasonable to suppose that among numbers of new arrivals there are children who have recently passed through such epidemics in the North and among which there are a certain percentage of carriers, and which, with bad toilets, through the agency of the fly, transmit the disease. When it is considered that flies are always present, although more numerous at certain times than at others, this view appears to be all the more probable. The fly and bad toilets are the worst enemies of southern Florida.

Smallpox: There have been no cases of this disease reported during the past year; numerous vaccinations have been performed, but there is as yet a large percentage of unvaccinated. It will probably take the reappearance of the disease to get them to avail themselves of this necessary protection.

Diphtheria: This disease has prevailed to a moderate extent. A few injections of antitoxin have been administered to the indigent. In the presence of diphtheria an effort has been made to locate carriers.

Leprosy: Several cases have been diagnosed in the city of Key West. It is felt that this disease is on the increase. These cases are quarantined as required by the Rules and Regulations of the State Board of Health, but it is felt that some provision should be made for these unfortunates. The proposed national leprosarium will probably solve the problem.

Poliomyelitis: One case was reported from Cocoanut Grove: this was investigated and pronounced to be meningitis, which was later confirmed at autopsy.

Malta Fever: A supposed case of this disease was seen in the early part of the year. Cultures of the micrococcus militensis were obtained from the Hygienic Laboratory, Washington, D. C., and agglutination tests performed, which were negative. Later the micrococcus tetragenous was isolated from blood on two separate occasions.

Plague: A suspicious case was reported in February; cultures and animal inoculations were negative.

In the city of Key West, which is the only port in this district having direct communication with a plague focus, there are no anti-plague measures in force. Formerly the branch laboratory there was examining rodents on an average about twenty a day, but on the discontinuation of the bounty, except in a few isolated cases, no rodents were delivered for examination. The city council has also failed to pass any rat proofing ordinances. With the cessation of active plague in Havana, it is next to impossible to impress on the minds of the community the need of these measures, although all stores and dwellings have their usual quota of rats.

Cattle tick eradication: For the past two years this subject has been brought to the attention of the dairymen of Key West, and an effort made to arouse their interest. At first considerable opposition was encountered notwithstanding it was shown that it would be to their interest to rid the county of this pest. However, in November, Dr. Nighbert of the Bureau of Animal Industry, made an address and later resolutions were passed that it was the concensus of opinion that an active campaign should be waged against the cattle tick. Since then a dairymen's organization has been formed and systematic dipping started. The county has been placed in quarantine and it is hoped that within the usual period this county will be among the tick free territory. An effort was made to get the Key West city council to pass a dairy ordinance on the model of the Miami ordinance, but this effort met with failure. At present Key West has no dairy ordinance, although badly needed. With the exception of Miami, there is no adequate supervision or control over the milk supply of the district.

Hookworm: This disease prevails to a great extent throughout the entire district with the exception of the Florida Keys, and successful treatment is hindered by the constant soil pollution. Until the latter condition is remedied through the proper disposal of excreta, intensive work along these lines will not be productive of much permanent good.

At the beginning of the year I was detailed on the Educational Health Exhibit Train, going on train from Key West to Fort Pierce, this detail taking about four weeks.

Throughout the entire year the branch laboratory was maintained in the city of Key West.

Before concluding, this opportunity is taken to state that the work of your assistant has been greatly helped by the District Public Health Nurses. These nurses, in their work, are able to ferret out unsanitary conditions, inaccessible to any one else, and which they promptly report to this office.

The following recommendations are respectfully made:

1. That as the services of the sanitary patrolman of Monroe County were dispensed with in September, that a new patrolman be appointed.

2. That the Sanitary Engineer of the State Board of Health investigate the water supplies of the cities on the east coast of this district, together with their sewerage systems and their present method of disposal of sewage, the latter in some instances now being done in violation of law.

3. That in public schools using well water for drinking purposes, regulations be adopted that will safeguard this water supply, such as a concrete cap around base of pump, etc.

Respectfully submitted,
JOSEPH Y. PORTER, JR.,
Assistant to the State Health Officer.

REPORT OF DR. C. T. YOUNG,

Assistant to the State Health Officer, South Central District

PLANT CITY, FLA., January 1, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.

DEAR DOCTOR:

I am enclosing, as requested, my report for the past year. Full accounts of all details, together with a more condensed statement of the various activities, for the period just mentioned, are already on file in your office. Following the custom, I have selected a few subjects for discussion.

Very truly yours,
C. T. YOUNG,
Assistant to State Health Officer.

SCHOOL INSPECTION

The Need for Proper Supervision of Health of School Children

During the past year it has been my opportunity to assist the local Medical Examiner, Dr. J. C. Knight, in the routine examination of about fourteen hundred children. The work was conducted at odd times and has covered a period extending over several months. It included children in the town and in the country schools. They were average pupils and quite representative of the student body of the State living outside of the larger cities. Doubtless, every one having to do with numbers of children in a professional capacity is familiar with the tremendous loss in vital assets which is following the lack of a proper supervision of their physical welfare and the continued neglect of the correction of the more common defects of child life; but the urgent need of a more active interest on the part of the State in this department of health conservation did not impress me until after a partial tabulation of the findings had been made. The analysis covers only eight hundred, eighteen of the fourteen hundred, and is as follows: (Only the more common defects mentioned.)

Number of children examined	818
Number of children found defective	719
Number of children not defective	99
Number of defects	2,602
Number having defective teeth	417
Number of hookworm suspects	327
Number of hypertrophied tonsils	290
Number of defective vision	193
Number conjunctivitis	139
Number unvaccinated	603

Defective Teeth

Children Should Be Taught the Use of the Toothbrush

Procedure Pursued by Mrs. Stevens at Ocala

In the examination it was the custom to include the decayed temporary, with the decayed permanent, teeth, and refer the child to the dentist who could determine the age of the tooth and advisability as to refilling. The neglected condition of the mouth and teeth was the most glaring of all the defects observed. Oral hygiene is certainly a most neglected study in a number of schools and there is a very definite percentage of unfortunate children whose mouths have never experienced the cleansing and health promoting influence of a good tooth powder and a tooth brush. That excellent article of Dr. George W. Goler's on "Teeth-Tonsils-Adenoids," published and distributed by the Metropolitan Life Insurance should be in the hands of every child old enough to read it, its study, a part of the curriculum. The teacher should instruct the children in the use of the tooth brush, and insist upon its use in the morning and evening. Mrs. Stevens, in her Juvenile Board of Health, at Ocala, has among other committees, one on oral hygiene which makes it a routine duty to see that every child is provided with tooth brush and paste, and not only knows how to use them, but does so. She has secured the interest of the child in a practical way and is getting results. Her methods are commended to other teachers, who are sincerely interested in the future welfare of their pupils.

It was not possible to use special instruments, and the absence of lavatory facilities prevented the use of the finger, so the examination for adenoids, except in the presence of the characteristic facies, was omitted.

Eye Tests

The Snellin's cards were religiously employed in the testing of the vision in all children familiar with the alphabet. Numerous cases of conjunctivitis were observed. A great many had follicular conjunctivitis and a still smaller number granular lids or trachoma. It is my opinion that a few cases of trachoma will be found in the majority of the schools of the State and in some of them in almost every room. Some of the cases detected consulted Tampa specialists and are already under treatment. A report of these findings was made to the Chairman of the School Board with the recommendation that an inspection of the eyes of the pupils in the different schools be conducted by a competent specialist, that the infected ones be excluded, etc. It is my impression that the matter was referred by him to the County Commissioners. Up to the present, nothing has been done. Sooner or later it is going to be necessary to make a thorough inquiry into the prevalence of trachoma in the State. Every now and then one hears of a local flurry following the diagnosis of an occasional case.

Trachoma

Relative to Checking up the Work

We have not had the opportunity for checking over the results of the work and probably will not until the children are re-examined. From the reports, however, of the dentists, specialists and physicians, enough has been accomplished among those able to carry out the suggestions made, to make it worth while. Of course, the larger percentage of the children remain untreated, and will continue so until a more thorough follow up service, and the means necessary, is provided for their relief. There is a great need for the work and those responsible for the enactment authorizing it should see that the measure is amended in the several details necessary to make it effective and that sufficient funds are provided for the carrying out of its provisions.

SCHOOL SANITATION

Illumination

The environs, out-houses, and buildings of the many schools that have been constructed during the last three years are more sanitary than the majority of those built prior to that time. Still an occasional defect is noticed in the lighting, heating or ventilation which could have been obviated had the plans been submitted for approval to some more experienced authority on school sanitation, than many of the designing architects appear to be. In many of the old buildings and especially those in some of the rural districts, the design and construction are especially poor. The illumination is often wretched in amount and arrangement. The other day, while seated at one of the pupil's desks, it was impossible to see the exercises which the teacher had written upon the black boards of a rural school, there was such a profusion of crossed lights and shadows. Quite often the amount of window space is insufficient and were it not for the fact that the climate is mild and they can be kept open practically all the time, the ventilation would become a serious problem. Equally fortunate is this for the heating. When the weather is cold, the stove at the center of the room probably makes it as uncomfortable for those seated nearby as the cold does farther away. Such a condition could be easily corrected if these stoves were jacketed properly.

Improper Ventilation

Common Drinking Cup Common Towel

The crusade against the common dipper and towel is beginning to bear results. The inability to secure responsible janitor service in the country districts has had a telling effect in the unclean class rooms, and often badly littered playground. The privies are of the open unscreened type and are in that condition which follows continued neglect. Several teachers have reported that it was impossibl to employ any one to give them the proper regular attention. Still others say that they have been unable to get the trustees to take any interest in this branch of local sanitation. If the condition of the schools is to remain satisfactory they should occasionally be subjected to an inspection by some independent authority. A law should be enacted requiring that the plans of all new buildings as well as the remodelling of old ones, be submitted to the Engineering Department of the Board. In this way many mistakes in school architecture can be prevented.

MUNICIPAL SANITATION

While I have not been assigned to a particular district until recently, still, sufficient time has elapsed for me to observe the excellent progress that is being made in the constant betterment of municipal sanitation. Practically all of the larger and many of the smaller towns have awakened to the realization of the fact that the care of the public health is one of their first duties. Many of them have passed ordinances authorizing the appointment of Boards of Health, election of a Health Officer and have enacted a very creditable code of sanitary laws. Still others have appointed a committee which they have designated the sanitary committee and some of the regular officials have had added to their customary duties, the responsibility of a regular and thorough sanitary inspection. The interest, and compliance with regulations which has followed the passage of the screening and privy laws is surprising. There is a good sized town not very far distant which a few months ago did not have a single thoroughly screened grocery store, market or food stall; which had over seven hundred open, unscreened and insanitary privies and there were apparently only a very few people in it, who were seriously interested in the betterment of health conditions. Today they have a Health Department, a health officer, and a number of excellent ordinances. It is one of the best screened towns in the State and those open privies have disappeared like magic. And that isn't all, their Health Officer is engaged in at least a score of other activities which have for their aim the improvement of the local health.

Referring to Specific Cases of Municipal Improvement in Sanitation

Other places have taken an interest in the correction of a faulty sewage disposal, are rebuilding the unscreened privy as is required by law, enforcing sewer connections, defining and requiring definite specifications for the construction of septic tanks, compelling the keepers of food stalls to properly screen them, and have passed some splendid laws which make for the promotion of the physical welfare of their people.

INVESTIGATION OF PREVALENCE OF DYSENTERY IN LAKELAND

The investigation of the prevalence of dysentery in Lakeland was undertaken at the request of the President of the State Board of Health and in compliance with the wishes of the State Health Officer.

In the report which follows, an attempt has been made to bring together such information as was available concerning the occurrence of dysentery in Lakeland and to study the cause of the disease with reference to the individual cases for the purpose of making recommendations for the diminution of those causes found responsible for the spread of the malady.

Prevalence

As the Health Department, which later made the disease a reportable one, had not been organized at the time of the inquiry, it was necessary to visit the different physicians to gain some idea of its frequency and collect data from them regarding the cases under treatment as well as those that had been discharged as cured. They reported that sporadic cases had been occurring from time to time but that the infection had not assumed epidemic proportions until about the first of November, 1915. Their records showed that at the time of the investigation they had thirty-three cases under treatment, that since November 1st, 1915, they had discharged twenty-eight more as cured. It was estimated that some thirty cases had been so mild that they had not consulted a physician, making the total number of cases for the period about ninety-one, seven of which had died, giving us a death rate of 7.69 per cent, a rate but a little lower than that of typhoid.

Viewed from an economic standpoint, by estimating the loss of time, income, expense of medicines, doctors and nurses, together with the loss of life, it is calculated that the epidemic cost the city about $20,000.00—an amount sufficient for the building of a modern hospital of dimensions sufficient for its present needs; to have organized and financed a health department with whole time officials; or it would have built some much needed extensions to both the water and sewerage systems. No attempt has been made to place a valuation in dollars and cents upon the distress and suffering which those affected with the malady have experienced, all because of a sewage-borne disease, which, in the light of our present knowledge of sanitation, could have been either prevented entirely, or reduced to more controllable limits.

Etiology

As some differences of opinion appeared to exist in the minds of the local medical men regarding the exact nature of the cause, or the particular type of the malady, whether it was a bacterial or protozoan organism, numerous specimens of blood and feces were obtained by the doctors from their patients (both recent and old cases) located in the different sections of the place, and forwarded to the laboratory, where, after a series of agglutination tests with several strains of dysenteric bacilli, microscopic examinations for protozoa, Dr. Birge declared, that in his opinion, we were dealing with the bacillary type of dysentery due to an infection with the bacillus dysenteriae (Shiga).

In their discussion of the etiology of bacillary dysentery Castellani and Chalmers hold that it is due to organisms which are allied with two main types.

Type 1. Shiga-Kruse—Bacillus dysenteriae, which does not ferment mannite.
Type 2. Flexner. Bacillus dysenteriae, which does ferment mannite.

These organisms they claim are readily found in the intestinal discharges of a patient and quite easily by scraping off the surface of the bowel during a post mortem. In addition to the two main types, there are several varieties of each type, but of less importance and not so widely distributed. A number of psuedo types have also been classified.

According to them, these various bacilli are differentiated by their varying fermentative actions upon carbohydrates, by agglutination, Pfeiffer's reaction and Castellani's absorption methods.

Carrier Cases

They further state that while these organisms are distributed in the intestinal discharges of those suffering with the disease, as is the case in typhoid, cholera, and a host of intestinal parasitic infections, that the dysentery carrier is probably a most potential factor in the dissemination of the trouble; while many people excrete the bacilli when suffering with mild relapses, they are frank enough to admit that up to the present, an epidemic has never been conclusively proven to be due to a carrier case. One can, however, reasonably assume that this is due more to the systematic failure to ascertain by bacterial examination that the intestines of the patient have been freed of the organism, than the falsity of the theory.

Strong and Musgrave proved that the infection takes place by the mouth, by feeding a man with pure cultures of the dysentery bacillus, which quickly produced an attack of dysentery, characterized by motions containing blood and mucous from which typical bacilli were grown.

Methods of Infection

A common method of infection is from contact with a patient or carrier, or with articles or food which have been contaminated by them. The bacilli are carried to the mouth on dirty hands or in polluted food and drink or in the utensils used in preparing and serving the same, which have been soiled by some cook or other person, who is a carrier, assisting in the preparation of the food. In sections where the soil is badly polluted it is said that the dust is a disseminator of the malady. Flies have been experimentally proven to be capable of carrying the bacilli and are held to be a most prolific source of infection in countries where they are troublesome. The water supply is rarely found to be at fault.

It appears that the organisms can exist in the canal for some time without causing symptoms of the disease until the vitality is lowered by some agency, such as a chill, attack of indigestion, when they are capable of producing their ill effects.

It is clear then, that the presence of an epidemic of this complaint is not an unexpected sequence of bad sanitation and is incontrovertible evidence of a defective method of sewage disposal, pollution of food and drink by flies which have had access, to human discharges, careless personal hygiene, indifferent disinfection of the excreta of infected cases, soil pollution, etc.

The disease prevails all over the world, more particularly at the end of the dry, and at the beginning of the wet, season, and at times, due to causes not yet explained, becomes unusually virulent, and is accompanied by a mortality rate which may be as high as 25 per cent.

EPIDEMIOLOGY

In order to obtain accurate information regarding the sanitation surrounding the cases as well as other data which would be helpful in solving the mystery of their infection and the means of its transmission, blanks were supplied the attending physicians covering all the points under investigation. These blanks were filled out and returned for 20 out of the 33 cases. A summary of the information which was gathered in this way is as follows:

Cases						
White	Colored	Total	Male	Female	Ages	Occupation
19	1	20	14	6	20, 25, 12 13, 22, 35 20, 28, 24 16, 13, 52 12, 15, 70 26, 50, 17 30, 1½	Clerk, Clerk Student, Housewife, Student, Minister, Actor, Child, Laundryman, Clerk, Student, Student, Housewife, Printer Student, Retired Farmer, Baby, Yard Clerk, Train Master, Student, Housewife.

	Residence		Sewer	Open
Date of onset	Screened	Unscreened	Connection	Toilet
Jan. 23, 29, 26, 29, 20, 24, 19, 26, 26, 29, 31, 29, 30, 27, 24, Feb. 1, 1, 1, 1, 1.	16	4	17	3

Water			
City	Local	Patient exposed by contact	Not exposed by contact
12	2	7	13

Raw foods, fruits, etc. taken within 4 days of onset		Soft Drinks		Meals taken away from home 4 days prior to onset		Milk Supply (Dairy)	
Yes	17	Yes	9	Yes	7	Yes, source not given	3
No	3	No	11	No	12	Brannen's	1
				Don't know	1	Lakeland	5
						Jackson	3
						Milk from country	1
						No milk	3

In the study of the information gained through the questionnaire one is impressed with what seems to be an apparent deviation from the usual method of the conveyance of an intestinal infection. In the examination of the premises but little fault was to be found with the sanitation surrounding the homes in which many of the cases had occurred, indeed, many of them were elegantly appointed and reflected in a pleasing manner the refined tastes of the occupants. In only one home, which was made the subject of a special investigation, and in which three cases had developed at intervals, it was found that the isolation of the patients had not been complete and that the discharges had not been disinfected with any degree of thoroughness. Flies were noticed in considerable numbers swarming about the sick room and in the dining room.

Reverting again to the data summary sheet, it is seen that the disease has prevailed almost entirely among *white* people (95%) of whom 65 per cent were male and 30 per cent female. In the sections of the town in which the sewage disposal is notoriously bad, where there were long rows of open insanitary toilets, which were cleaned largely by the flies and chickens, only one case had developed. The cases with one exception ranged in age from 12 to 70 years. The infantile population which subsists largely on the milk from the dairies had practically escaped the infection. Significant also was the occupation of those who contracted the malady; only four of the number were more or less continuously engaged about their homes. It is thought, however, that of these, at least two, were accustomed to occasionally visit the business section. All others were employed in different business industries or in school, and spent their daylight hours in or near the business center. One-half of the cases developed suddenly between January 28th and February 2nd. About 33⅓ per cent had been exposed to previous cases and 85 per cent had eaten raw foods, fruits and vegetables four days before the onset; 35 per cent had taken meals away from home. The infected were not numbered among the customers of any one dairy, but were fairly well distributed among the different dairies.

Though a sanitary survey had been recently completed of Lakeland, it was deemed advisable to make some further examinations covering part of the ground previously gone over but with more special reference to the subject under consideration.

Lakeland has a population of 7,287.

SEWAGE DISPOSAL

A rather small, considerably overloaded and badly operated Imhoff tank is placed near the west-central shore of Lake Parker. To it, through a system of piping which in one section has been difficult to keep open, is carried the sewage from 40 per cent of the corporate area and about 60 per cent of the population. It is estimated that about 700 houses are connected with this system, that 700 more have open, insanitary privies. A few, unable to reach sewers have constructed cesspools. The night soil was collected at irregular intervals and carried to the dump ground where it was emptied into shallow trenches. It was learned that a nearby farmer had been hauling a part of it away and using it as fertilizer. The trenches were open and it had not been the practice to cover each dumping with a layer of sand to prevent fly pollution and breeding. The bucket system was not in vogue.

WATER PLANT

The water supply is derived from a 10-inch well 610 feet deep, cased 500 feet, located in the center of the town. The air lift capacity was 900 G. P. M. The construction of the two circular covered reservoirs was poor. About 1,000 families were using the water, the remaining 640, local pumps. A few were said to have cisterns. Samples of water were collected from the air lift outlet at the plant under the usual precautions and shipped to the laboratory for examination. The report was that they were free from intestinal bacteria.

Referring to Construction of Reservoirs

ICE

(Investigated by Special Request)

This product is made from distilled and reboiled water and from the raw water of Lake Weir. The Superintendent of the ice company affirms that this last ice is used only for refrigeration purposes and not a pound of it is used in Lakeland. Bacterial examination of the ice made from distilled water was negative; while that made from the raw lake water was positive for intestinal bacteria. It is the practice (and it is a bad one) to store these two ices in the same room, often side by side. As has been remarked by Dr. Rosenau, "because surface impurities can be washed from the surface of a cake of ice, there is no excuse for uncleanly methods in handling." A separate room should be provided for the ice used in food and drink and it should not come in contact in any manner with the ice made from the lake water. The suggestions of Dr. Wilson of that place, that metal covers replace the dirty water-sogged covers of the cans, that walking over the tanks be prohibited, except by those wearing rubbers, the soles of which have been carefully cleansed, are excellent ones and should be enforced.

Suggestions for Improvement of Ice

MILK

Referring to Conditions of Dairies

As cases of dysentery had been reported on the premises of two of the dairies, an inspection of all dairies was made. The report was true of only the Lakeland Dairy. A helper who had just recovered from the disease, had that morning resumed his work of milking the cows. An open toilet, despite a former request that it be moved, stood about forty feet from the bottling room, in the interior of which flies were swarming about. The inspection covered the different details of the dairy business and many defects were noted and called to the attention of the different proprietors. The habit of the dairymen of delivering milk and leaving the bottle at the houses where patients with infectious diseases are confined, is a dangerous one. The milk should be poured into some container provided by the housekeeper and the bottle retained by the milk man.

FOOD SUPPLIES

An examination was made of the various places handling food supplies which are consumed in the raw state or which are eaten without further preparation. A few of them were screened, but not with that thoroughness necessary to keep the different eatables free from fly pollution. In many places the vegetables were lying on the floor, at others, they were placed in various containers about the doorway and in some instances on the outside. The fruit stands were all open. No effort was made to protect the fruit from either the dust or the flies. The winter had been rather a warm one. Fly breeding had continued with but slight interruption since summer. A few days before the investigation a light cold wave had developed and the change in temperature had been sufficient to drive the flies indoors. They were noticed in unusual numbers in practically every place visited, and their sudden increase was almost invariably commented upon by the different shopkeepers. Simultaneously, there was a flare-up of dysentery. Of the twenty recorded cases, eleven of them developed between January 28th and February 2nd. Residual infection had been increased by an influx of tourists and further intensified by a season of dry weather. The bomb was ready for the transmitting agent which had bred in its midst and which, with the oncoming of cooler weather became more certain in its results.

Increased Dysentery Due to Fly Transmission

For the protection of the individual against an attack of dysentery, it is recommended:

Recommendations

That all food be well cooked and well protected from flies before being eaten.

That drink from sources of questionable purity be boiled.

"Precautions against flies and vermin and care as to personal hygiene, especially diet are indicated." (Castellani and Chalmers.)

The eating of any raw food during the prevalence of dysentery is a dangerous practice.

FOR MUNICIPAL PREVENTION AND CONTROL

1. That recommendations made in a recent sanitary survey for the improvement of the sewage disposal, especially that part dealing with the construction, fly proofing and sanitary maintenance of all open surface privies, be enforced as soon as possible.
2. That a Board of Health be organized and a Health Officer appointed who shall undertake at once an anti-fly crusade—the destruction of breeding places and the effective screening of all food products for direct consumption; and a systematic inspection of places handling and producing food products.
3. That dysentery be made a reportable disease and that the Health Officer upon receipt of information as to the whereabouts of a case take such steps as may be necessary to assure himself that the discharges are being disinfected and that the general management of the patient is such as would tend to prevent an extension of the infection.

In compliance with the suggestions, a City Board of Health was organized and a city health officer, appointed, Dr. J. F. Wilson, the appointee has been most enthusiastic and untiring in his efforts for the improvement of local conditions. How well he is succeeding one can see from the attached letter received in response to a request for a brief survey of sanitary conditions, together with an enumeration of the activities of his department during the time which has elapsed since the investigation.

Letter from City Health Officer of Lakeland

"I regret very much delaying the information you wanted but as you understand the disadvantage I am working under at present, I will not go further into apologies but give the information as I have been able to get it."

No. sewer connections (estimated)	500
No. Stevens cans in operation at present	500
No open closets unprotected from flies	300
No septic tanks	0
Per cent populated area covered by sewer system	25%
No. buildings in 200 ft. sewers unconnected	150

WATER

Artesian well 618 feet deep cased with ten inch pipe to depth of 500 feet

No. connections with city water	1,500
No. surface pumps (estimated)	1,000
No. cisterns	0

I am unable to say how many cases of dysentery we have had since February, 1916, as the doctors have not reported any, though I know that we have had a few cases from time to time but no epidemic.

We have passed the following ordinances:

Regulating the use of and construction of sanitary fly-proof privies; recommending the use of the Stevens cans as complying with same.

Regulating the sale of milk and other dairy products, fixing the standards of same and the dairies.

An ordinance requiring the screening of all foods offered for sale, also drug stores and cool drink stands, restaurants, etc.

An ordinance requiring the reporting of communicable diseases, their control, school attendance, quarantine, etc.

An ordinance regulating and requiring sanitary barber shops.

SCREENING DONE

All butcher shops, groceries, fruit stands, restaurants, etc., have screened their places of business and all places selling fresh meats and vegetables have made special screened compartments for same in addition to the screening of doors and windows, etc. However, the drug stores and cool drink stands have not complied yet.

DAIRY IMPROVEMENTS

The Lakeland Dairy, Brannin's Dairy, and Jackson's Dairy have done something towards improving their dairies and I find the Lakeland Dairy making efforts to do more.

Any other information you desire, I will gladly supply, and I also hope to, in a short time, be able to furnish you with a copy of the several ordinances passed.

REPORT OF DR. W. P. CRIGLER,

Assistant to the State Health Officer, Central District

OCALA, FLA., January 1, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of the Bureau of Communicable Diseases.)

DEAR DOCTOR:

I have the honor to submit the following report of my activities during the year of 1916 in the discharge of my duties as Assistant to the State Health Officer:

January	Ocala. Routine office work. Called in consultation in case of Pellagra, discussion with family regarding the nature of the disease and outlined treatment. Two cases of diphtheria were reported here during the month. Visited the cases and gave instructions in regard to isolation. Visited the schools with the City Physician and assisted in examination of the pupils. Called by physician to see a case of eruptive disease, diagnosis chicken pox.
February	Detailed to go to Altamonte Springs and make an investigation in regard to two cases of typhoid fever. Source of infection found to be fly-borne. Specimens of milk and water used by the Altamonte Springs Hotel sent to laboratory for examination. Ocala. Consultation with local physician in regard to two cases of chicken pox. Investigation with County Commissioners concerning the opening of a new cemetery for negroes. Could find nothing from a sanitary standpoint to declare it a menace to health. Called by local physician to make diagnosis of suspicious case of scarlet fever. Diagnosis erythemia scarlatiniform.
March	Sanford. Detailed to take charge of outbreak of diphtheria. Found four cases. Inspected for a week the throats of all children in the kindergarten, primary and grammar schools. Swabs were taken from any suspicious looking throat, and, if found positive, they were sent home and isolated until two negative reports were received. By this manner we were able to keep the children under control and observation and the result was no further cases developed. Sanford. Assisted in the final examination of babies for the Women's Club Better Babies' Contest. Taft. Investigation of reported case of smallpox at turpentine camp 7 miles out. Found to be chicken pox. Took charge of a case of smallpox found in negro at lumber camp 19 miles from Ocala. Vaccinated all contacts and advised all in the camp to be vaccinated. Ocala. Routine office work. Called in consultation to make diagnosis of an eruptive disease. Found to be impetigo contagiosis.

April	Seven more cases developed at lumber camp 19 miles from Ocala. Vaccinated 40 colored and 5 white. Dade City. Detailed to visit Dade City and inspect the municipal septic tank. Report of my investigation forwarded to you. Kissimmee, Orlando, Tavares, Eustis, Leesburg. Tour of inspection. Talks with city officials and physicians in regard to improving the sanitary condition of their towns and endeavored to enforce the screening laws concerning fruit stands and open surface closets. Martin. Requested by the local physician to investigate a sanitary nuisance in the form of a breeding place for mosquitoes. Found three barrels on station platform to contain larvae of Anopheline mosquitoes. Nuisance was abated.
May	Bushnell, Webster, Brooksville. Tour of inspection. Ocala. Routine office work. Inspected the site for a Public Park which the Woman's Club has under consideration. Report forwarded to you.
June	Floral City. Requested to visit Floral City and investigate an outbreak of an intestinal trouble. Found to be amoebic dysentery. Visited families in the neighborhood and gave instructions in regard to the prevention of the disease. Dunnellon, Crystal River, Homosassa, Umatilla. Tour of inspection. Ocala. Routine office work.
July	Conference with physician regarding the typhoid situation at Blitchton and a supply of typhoid vaccine supplied for the indigent. Sanford. Requested to investigate a reported case of Leprosy. Found a case in young man. Detailed report sent you. High Springs, Alachua. Tour of inspection.
August	Inverness, Bushnell, Starke. Towns inspected and also visited in interest of the Vital Statistics of that county, of which the towns are county seats. Inverness. Investigation of reported case of cholera. Diagnosis, amoebic dysentery. Jacksonville. Inspection of children on all incoming trains in regard to the quarantine of Infantile Paralysis. Lawtey. Investigation of typhoid fever.
September	Mayport. Investigation of reported case of Infantile Paralysis. Found a child who had the disease a year ago. Reddick. Inspection of ice and cold storage plant. Wildwood. Investigation of an outbreak of typhoid. Report sent you. Sanford. Investigation of reported death from Infantile Paralysis. Santa Fe. Investigation of alleged nuisance. Melrose. Investigation of alleged nuisance in form of pig pen. Found not to be sanitary nuisance.

October	Center Hill. Investigation of an outbreak of diphtheria. Three cases reported. Hernando. Investigation case of diphtheria in teacher of Primary School. Crystal River. Visited to obtain specimens of water, for bacteriological examination, from local bakery. Bronson. Inspection of closet at County Court House. Recommended to put same in fly-proof condition. Archer. Sanitary inspection. Dunnellon. Investigation of an outbreak of intestinal disease affecting children. Diagnosis acidosis. Ocala. Routine office duties. Diagnosis of reported case of measles.
November	Micanopy. Sanitary inspection. Williston. Conference with school trustees concerning diphtheria in school. Ocala. Routine office work.
December	Ocala. Routine office work. Visited school with city physician. Enforcement of screening law for fruit stands. Inspection of municipal septic tank. Abatement of nuisance in shape of a breeding place for mosquitoes.

Respectfully submitted,

W. P. CRIGLER, M. D.,

Assistant to the State Health Officer.

REPORT OF DR. J. E. TAYLOR,

Assistant to the State Health Officer, North Central District

LIVE OAK, FLA., January 10, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
(Through Dr. C. H. Dobbs,
Chief of the Bureau of Communicable
Diseases, State Board of Health,
Jacksonville, Fla.)

DEAR DOCTOR:

I beg to attach hereto my annual report for 1916.

OUTLINE OF THE YEAR'S WORK

Date	Place	Nature of Work
Jan. 1- 6	Gainesville	Routine office work. Lectures to High School.
Jan. 6- 9	Cedar Keys	Investigating outbreak of trachoma in the schools. A conjoint report of this detail was submitted by Dr. C. W. Bartlett, Asst. to the State Health Officer, who was detailed as consultant with me.
Jan. 10-12	Cedar Keys	Further work on trachoma.
Jan. 13-18	Gainesville	Routine office work.
Jan. 19	Oldtown, Cross City Scrub Creek	Treating school children for hookworm disease.
Jan. 20-31	Gainesville, Alachua, High Springs, Newberry, Archer, Micanopy, Hawthorne, Waldo	Routine office work and lectures to the different high schools on hygiene and health. A special report of this lecture work will be found further on in this report.
Feb. 1- 7	Gainesville	Routine office work. Bacteriological examination for local physicians. Conference with City Council. Recommendation to the City Council that sewer be extended to take in negro parochial school. Recommendation accepted. Conference City Engineer and members Sanitary Committee regarding sewer extension, and disposal of night soil.
Feb. 7	Alachua, High Springs, Newberry, Archer	Lectures to high schools on hygiene. Meeting with City Council regarding sanitary improvements.
Feb. 8	Micanopy, Hawthorne, Waldo	Lectures to high schools on hygiene.
Feb. 9-11	Gainesville	Routine office work. Microscopical examinations for local physicians.
Feb. 12-15	Carbur	Smallpox was reported. Upon arrival and examination of patients made a diagnosis of chicken pox. Isolation and disinfection effectually controlled the disease.
Feb. 16-18	Gainesville	Routine office work.
Feb. 18	Jacksonville	Conference with Dr. Carroll Fox, U. S. P. H. Service, regarding health work in my District. Conference with the State Health Officer.
Feb. 19-20	Gainesville	Routine office work. Microscopical examinations, etc.
Feb. 21	Alachua, High Springs, Newberry, Archer	Lectures to high schools on hygiene.
Feb. 23-24	Cross City,	Treating hookworm in school children.
Feb. 25	Fairbanks	Two cases of typhoid. Screening patients, disinfection of excreta. No spread.
Feb. 26-27	Gainesville	Routine office work.
Feb. 28	High Springs	Conference with City Officials regarding vital statistics. Was advised that model ordinance would be passed at next meeting of City Council.
Feb. 29	Micanopy	One case typhoid. Vaccination of nurse. Usual control.
Mar. 1	Gainesville	Routine office work.
Mar. 2	Micanopy, Hawthorne, Waldo,	Lectures to high schools on hygiene.
Mar. 3	Fairbanks	Investigation to see if typhoid precautions were being carried out. Found everything fairly satisfactory. No new cases.
Mar. 4- 5	Gainesville	Routine office work.
Mar. 6	Alachua, High Springs, Newberry, Archer	Lectures to high schools on hygiene.
Mar. 7	Trenton	Lecture to high school on hygiene.
Mar. 8	Gainesville	Lecture to high school on hygiene. Routine office work.
Mar. 9	Lake Butler	Sanitary survey of the town.
Mar. 10	Alachua, High Springs, Newberry, Archer	Lectures to high schools on hygiene.
Mar. 11-12	Gainesville	Routine office work.
Mar. 13	Sapp	Sanitary nuisance.
Mar. 14	Trenton	Lecture to high school on hygiene.

Mar.	15	Gainesville	Routine office work. Lecture to high school on sanitation.
Mar.	16	Trenton	Sanitary nuisance. Abatement.
Mar.	17	Gainesville	Routine office work.
Mar.	18	Alachua, High Springs, Newberry, Archer	Letter to high schools on hygiene.
Mar.	19	Arredondo	Diphtheria. Usual methods of control. No spread.
Mar.	20	Gainesville	Routine office work.
Mar.	21	Micanopy, Hawthorne, Waldo	Lectures to high schools on hygiene.
Mar.	22	Raiford	Sanitary nuisance.
Mar.	23-26	Greenville, Aucilla, Monticello, Jefferson Co.	Reported smallpox. Found nothing but chicken pox.
Mar.	27	Gainesville	Routine office work.
Mar.	28-31	Tallahassee, Madison, Quincy, Cottondale, Fountain, Panama City, St. Andrews, Millville, Moortown, South Port, Lynn Haven, Farmdale, Bellisle, Earley, Overstreet	General inspection of the Tallahassee District. Special inspection of the Bay County neighborhood with reference to pellagra. More will be said further on in this report regarding this situation.
Apr.	1- 3	Panama City, St. Andrews, etc.	Detail of March 28th.
Apr.	4	Alachua, High Springs, Newberry, Archer	Lectures to high school on hygiene.
Apr.	5	Micanopy, Hawthorne, Waldo	Lectures to high schools on hygiene.
Apr.	6	Trenton	Lectures to high schools on hygiene.
Apr.	7-10	Gainesville	Lectures to high schools on hygiene. Routine office work.
Apr.	10	Alachua, High Springs, Newberry	Monthly inspection tour.
Apr.	11	Alachua, High Springs, Newberry, Archer	Lectures to high schools on hygiene.
Apr.	12	Trenton	Lectures to high schools on hygiene.
Apr.	13-14	Gainesville	Routine office work. Conference with City Board of Health regarding health work in Gainesville. Lecture to high school on hygiene.

Apr.	15	Micanopy, Hawthorne, Waldo	Lectures to high schools on hygiene.
Apr.	16	Alachua, High Springs, Newberry, Archer	Lectures to high schools on hygiene.
Apr.	17	Gainesville	Lectures to high schools on hygiene.
Apr.	18	Micanopy, Hawthorne, Waldo, Fairbanks	Monthly inspection tour.
Apr.	19	Gainesville	Routine office work.
Apr.	20	Starke, Raiford, Lake Butler	Inspection with District Nurse. Lecture to school at Starke.
Apr.	22	Alachua, High Springs, Newberry, Archer	Lectures to high schools on hygiene.
Apr.	23	Trenton	Lecture to high school on hygiene.
Apr.	24-27	Gainesville	Routine office work. Microscopical examinations. Sanitary inspections.
Apr.	28	Archer, Bronson, Trenton	Monthly inspection tour.
Apr.	29-30	Gainesville	Routine office work.
May	1	Alachua, High Springs, Newberry, Archer	Lectures to high schools on hygiene.
May	2	Trenton	Lectures to high school on hygiene.
May	3	Micanopy, Hawthorne, Waldo	Lectures to high schools on hygiene.
May	4- 5	Gainesville	Lecture to high school on hygiene. Routine office work. Inspection of markets, etc.
May	6-10	Greenville, Madison, Monticello and adjacent country	Smallpox. No cases found and none developed during usual incubation period. Probably chicken pox.
May	11	Gainesville	Routine office work.
May	12	Trenton	Lecture to high school on hygiene.
May	13	Newberry, Alachua, High Springs, Archer	Lecture to high schools on hygiene.
May	14	Micanopy, Hawthorne, Waldo	Lecture to high schools on hygiene.
May	15-20	Gainesville	Routine office work. Microscopical examinations.
May	21-25	Archer, Meredith, Bronson, Otter Creek, Sumner, Cedar Keys, Morriston, Williston	Monthly inspection tour.

May	25-27	Tampa	Conferences regarding a disease among the children of central Florida, diagnosed as Acidosis. Nothing definite determined regarding the condition, but saw no reason for believing it other than a decided autointoxication of intestinal origin.
May	29-31	Lake Butler, Lake City, Wellborn, Live Oak, White Springs, Ft. White	Monthly inspection tour.
June	1-30	Montgomery, Ala.	Annual vacation.
July	1-31	Jacksonville	Inspection of children coming into the State from Northern points for infantile paralysis. During the three months this inspection service continued approximately 22,000 children were inspected by Dr. C. T. Young, Asst. to the State Health Officer and myself. Details of the scheme of this work will doubtless be given elsewhere in the report of the State Board of Health officials.
Aug.	1-31	Jacksonville	Train inspection work with reference to infantile paralysis.
Sept.	1-30	Jacksonville	Train inspection work with reference to infantile paralysis.
Oct.	1-13	Live Oak	Establishing new office. On account of the change in territory of the different Assistants to the State Health Officer, it was found necessary to remove my district headquarters from Gainesville to Live Oak. This change was scheduled to go into effect June 1st, but on account of annual vacation and the detail to Jacksonville to assist in guarding the State against anterior poliomyelitis, I did not reach Live Oak until October 1st.
Oct.	13-14	Perry	Monthly inspection tour. Inspecting, with Mr. Simons, Sanitary Engineer, sewage disposal of Perry. Meeting with City Council.
Oct.	15-17	Live Oak	Routine office work. Microscopical examinations for local physicians.
Oct.	18-21	Falmouth, Lee, Ellaville, Madison, Greenville, Aucilla, Monticello	Monthly inspection tour. Meeting with City Councils. Conference with City health officials.
Oct.	22	Lake City	Monthly inspection tour.
Oct.	23	Hampton Spgs.	Collection of water for bacteriological examination. This water was found to be free from colon organisms, and with a very low bacterial count.

Oct.	24	Live Oak	Routine office work.
Oct.	25	Jasper, White Springs	Monthly inspection tour.
Oct.	26	Live Oak	Monthly inspection tour and inspection.
Oct.	27	Lower end of Columbia Co.	Typhoid. Two cases. Almost certainly caused by flies. Original case imported from South Florida.
Oct.	28-30	Live Oak	Routine office work.
Oct.	31	Mayo and Dowling Park	Monthly inspection tour.
Nov.	1- 3	Live Oak	Routine office work. Bacteriological work for local physicians.
Nov.	3	Branford	Reported infantile paralysis. None found.
Nov.	4	Live Oak	Routine office work.
Nov.	5	Lake City	Reported infantile paralysis. Diagnosed meningitis.
Nov.	6-21	Live Oak	Lectures to District Nurses. Microscopical work for local physicians. Conference with City and County officials. Routine office work.
Nov.	21-23	Ellaville, Lee, Falmouth, Madison, Greenville, Aucilla, Monticello	Monthly inspection tour en route to Monticello to investigate outbreak of diphtheria among the school children. Upon arrival in Monticello found Dr. Brinson, City Health Officer taking every precaution. No further spread of this disease. No deaths.
Nov.	24-30	Live Oak	Routine office work. Microscopical work.
Dec.	1-31	Live Oak	Routine office work. Microscopical work for local physicians. Consultation with City Council regarding septic tank. Abatement of nuisance. Meeting with County Board of Education with reference to beginning high school lectures after the holidays. Acting City Health Officer during the absence of that official. Inspection of drainage of Live Oak.

The above outline is indicative of the year's work, however, I want to call especial attention, in as brief a manner as possible, to certain phases of these different endeavors to better health conditions in the districts in which I have worked.

SCHOOL WORK

I take this up first as it is, in my opinion, most important. This work was the outcome of a letter addressed by me to the State Health Officer, asking permission to make these weekly visits to the several high schools of Alachua County. In his reply, the State Health Officer approved of the idea, but thought the county should bear whatever expense was incurred in travelling from one to another of the schools. The matter was then taken up with the County Board of Education, and my offer to deliver these lectures was promptly accepted.

During the year, twenty-five lectures were given, and examinations held on the following subjects: Gross anatomy, physiology, bacteriology, water and water supplies, milk and milk supplies, food and food values, air, ventilation, tuberculosis, typhoid fever, hookworm disease, smallpox, diphtheria, scarlet fever, measles, mumps, whooping cough, pneumonia and bad colds. It was my constant aim to teach only the fundamentals and to steer clear of merely ornamental knowledge. This, as can be easily appreciated, was no small task, as it is always difficult to translate technical words and phrases into high school English. However, I believe I succeeded in imparting a store of information to these pupils which will prove of life-long benefit, and when they take their places as the voters and homemakers of the County, I feel that Alachua County will be fortunate in having some six hundred intelligent and honest health workers.

The subjects of anatomy and physiology were gone into just enough to enable the student to know approximately how they were made and how the different parts of the body carried out the different functions. In teaching the subject of bacteriology, I attempted to show that bacteria were rather common place objects notwithstanding some of them were known by staggering names. The method of propagation, food supply and general conditions under which bacteria live and multiply were shown. In addition to this general bacteriology, the organisms causing specific diseases were studied more in detail. The relations of pure water, fresh air and pure milk to good health were brought out in several lectures. The different diseases were then taken up and carefully studied from the standpoint of cause, method of spreading, community interest, individual interest, and methods of avoiding. In order that the scope of the work may be more fully appreciated, I give below the final examination questions:

1. Name the cause of tuberculosis, typhoid fever, diphtheria.

2. How should one suffering from tuberculosis order his life?

3. What three good ends will be served by sleeping on a screened porch?

4. How is typhoid fever most often spread?

5. Name the things one can do to keep from having typhoid fever, malaria.

6. How can one avoid smallpox? How often should this be done?

7. Why are coughing and spitting in public places dangerous?

8. How should the nose and throat discharges from contagious diseases be handled?

9. Give five factors in the production of good milk.

10. How is water contaminated?

Interest in the course never once flagged during the entire year. Notes were carefully kept of each lecture, and in many instances, the teachers were as enthusiastic as the students. The careful attention given to keeping notes, efforts on my part to correlate the studies and splendid co-operation from the different teachers, resulted in an unqualified success for the course, and made me feel that public health work along this line would pay an enormous interest on the investment.

MONTHLY INSPECTION TOURS

On these monthly inspection tours, I met the different mayors and City Councils and studied each town as a separate entity. Much good was done, but many disappointments were encountered. Some of the towns had no money, others had antiquated arrangements which were hard to do away with, while in others I met such hearty response and co-operation, it was a pleasure to visit them.

Special attention was given to the statutes relating to surface privies, screening fruit stands, restaurants, etc., and our ancient enemy, the house fly, was fought as persistently as possible. Then, almost each town visited had some nuisance which I was usually able to get abated. Taken as a whole, these monthly inspection tours were unquestionably of great help to the different municipalities, and were fully appreciated.

TRACHOMA

I will leave this subject for Dr. Bartlett to handle, however, there is no doubt in my mind but that this disease is scattered practically all over central Florida, and I am afraid we will have no end of trouble with it in the future.

CONTAGIOUS DISEASES

My district was almost entirely free of contagious diseases of the graver types during the entire year. A few sporadic cases of diphtheria and typhoid fever were reported to me, but in each instance we had no trouble in stopping it with the development of one or two cases. The absence of smallpox was especially noticeable, as during the entire year I did not see a single case of this disease.

A review of the year's work shows that, with the exception of the detail to Jacksonville, it was almost given up to teaching and bacteriological work for local physicians of headquarters.

Respectfully submitted,
J. E. TAYLOR, M. D.,
Assistant to the State Health Officer.

REPORT OF DR. M. E. HECK,

Assistant to the State Health Officer, North East Coast District

ST. AUGUSTINE, FLA., January 1, 1917.

Doctor Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.

DEAR DOCTOR PORTER:

In submitting to you this, my fourth annual report as your assistant for the North East Coast District, I feel the brevity of my report speaks more eloquently than anything else for the efficiency which has been secured by your plan which was put in operation four years ago. The close and harmonious co-operation of the State Health Officer and his various subordinates has so lessened the prevalence of communicable diseases that in my district I have had no serious outbreaks to deal with, and consequently have no extensive details to fill pages of an annual report.

In nearly four years of service with the board I have gradually secured more and more assistance and co-operation from the various municipalities in my district until now it is seldom necessary for me to stay long at one place in order to look after local health affairs. There is scarcely an incorporated municipality in my district which has not one or more ordinances on the books passed on the recommendation of the State Board of Health. I deem it an honor that I have been instrumental in aiding you in your campaign for better health conditions in the various towns in my district.

Briefly the activities of my office may be stated as follows:

I. Regular Inspection Trips Through My District.
II. Special Inspection Trips Through My District.
III. Special Details.
IV. Educational Work.
V. Correspondence.
VI. Miscellaneous.

I. REGULAR INSPECTION TRIPS THROUGH MY DISTRICT

Of these trips I made ten, but each of these was not a complete trip through my entire district. However, I visited, at least twice, each incorporated town in my district, and many of the more important ones I visited as many as six times during the year.

The principal thing accomplished on these trips was the passage of local ordinances regulating the construction of surface privies, and enforcement of the statute relating to screening of fruit stands, grocery stores, etc. A very few of the smaller towns in my district have failed to pass the "Privy Ordinance," but it has been both passed and enforced in the majority of them.

Quite a few of the larger towns have adopted Health Code Ordinances, and many have appointed local health officers. This is the reason I have not had so many special details to attend to; the local health officer has looked after sanitary conditions and prevented the spread of infectious diseases.

II. SPECIAL INSPECTION TRIPS THROUGH MY DISTRICT

Exclusive of special details from the executive office, I have made special trips as follows:

March 13th	Delray and Lake Worth.
March 21st	Jacksonville.
April 20th	Daytona.
April 21st	New Smyrna.
May 12th	Lake Helen, Orange City and DeLand.
May 19th	Hastings and
May 19th and 20th	Palatka.

Most of these special trips were made for the purpose of attending to matters of importance which I felt should not be allowed to wait until I made my next regular inspection. My monthly reports to the State Health Officer will give the details attended to on these visits.

III.

Special Details are as follows:

1 Jan. 1st to 3rd, DeLand, on account smallpox.
2 Jan. 7th to 17th, DeLand, on account smallpox.

3 Feb. 5th to 22nd, on duty on Health Exhibit Train.
4 Feb. 24th and 25th, Jacksonville, for purpose of conferring with Dr. Carroll Fox, U. S. P. H. and M. H. S.
5 Mar. 8th to Mar. 13th, West Palm Beach, supervised and assisted in "Better Babies Conference."
6 Mar. 23rd to Mar. 25th, Hawk's Park and New Smyrna, investigated case of typhoid fever at Hawk's Park.
7 Mar. 28th, Russell, investigated alleged case of smallpox and diagnosed case of chicken pox.
8 Daytona, investigated the standing of an individual who sought endorsement of the State Health Officer for private sanitarium for treatment for tuberculosis.
9 April 21st to May 12th, New Smyrna, Hawk's Park, Oak Hill and points along the coast intervening, Mosquito Survey to determine breeding places and recommend measures for eliminating same.
10 April 26th, Rogers, case of smallpox.
11 July 26th, Fort Pierce, investigated alleged sanitary nuisance.
12 July 30th, Dupont, visited case of pellagra.
13 Sept. 5th, Bunnell, investigated case of "Unknown" skin disease. Diagnosed case of Impetigo Contagiosa.
14 Sept. 6th, Jensen, investigated alleged case Anterior-Poliomyelitis. Diagnosis not confirmed.
15 Oct. 1st, Barberville, investigated outbreak of scarlet fever.
16 Oct. 3rd, Favorita, outbreak of diptheria investigated. (Three cases died of the disease).

IV. EDUCATIONAL WORK

Work along this line was as follows:

1 January 14th, Melbourne, illustrated lecture; subject: "Vital Statistics and Better Babies."
2 January 25th to 29th, DeLand, Educational Exhibit at Volusia County Fair.
3 March 7th, West Palm Beach, address; subject, "The Origin and Purpose of Baby Week Campaigns."
4 Oct. 7th, St. Augustine, address; subject, "Examination of School Children."
6 Lecture course to nurses of Flagler, and to Florida East Coast R. R. Hospitals, on "Bacteriology and Preventive Medicine."
7 Series of articles in the St. Augustine Daily Evening Record under the title "Health Hints."

Of course the work of health officials is all more or less of an "Educational" nature, but I have included under "IV" only those duties which were of especial importance in that respect. This does not mean it is any the less educational when the mayor and town council are made to see the importance of the subject of properly constructed surface privies, and are sufficiently "Educated" in the matter that they will adopt an ordinance to regulate matters of this kind. Indeed, this is one of the most important parts of one's educational work.

V. CORRESPONDENCE

The word "Correspondence" appearing in my monthly reports means that I have kept in touch by correspondence with various individuals and municipalities throughout my district. For instance, an alleged nuisance is reported to me with the request that I investigate same. Often I have been able to handle the matter by correspondence without putting the State to the expense of a visit. Often through correspondence I have learned that certain reports of nuisances were simply a means used to annoy a neighbor; persons never being bothered by a nuisance, apparently, until ill-feeling makes them want to "get even" for some alleged wrong. The State Board of Health is drawn in to satisfy a personal grudge.

Again, as a means of following up the work of my regular monthly visits, I find a letter in between visits addressed to the mayor and town council serves to keep the matter fresh in their memories. Also, a notice a week or ten days ahead of a proposed visit serves to announce my coming visit and this practice has brought good results, in fact letters have often brought results where personal visits have failed.

During the year just finished there were few days when I did not either write or receive a letter relative to the duties of my office, and some days I have sent out as many as thirty circular letters. I have also tried to keep in close touch with the State Health Officer at all times.

VI. MISCELLANEOUS PUBLIC HEALTH WORK

Under this head I have mentioned a few duties performed locally, and which I attended to at odd times while stationed at headquarters.

These duties are as follows:

February	10th	Called attention of City Manager of St. Augustine to insanitary condition of city jail.
April	10th	Notified violators to comply with the screening law, St. Augustine.
April	11th to 15th	Wrote Sanitary Code for St. Augustine.
April	17th	Attended meeting of St. Johns County Medical Society for purpose of going over with them the proposed Sanitary Code for St. Augustine.
April	18th	Attending meeting of City Commission for purpose of presenting the new Sanitary Code for their consideration. (St. Augustine.)
April	19th	St. Augustine, notified 39 violators to comply with statute relating to the screening of fruits, vegetables, etc.
April	20th	Daytona, notified violators to comply with the screening law.
May	1st	St. Augustine, inspected fruit stands, grocery stores, restaurants, etc., to see that they were complying with the screening law.

On my regular trips through my district I always investigated to see that the screening law was being enforced, but I have included the above under the head of Miscellaneous since it was not in the course of my regular inspection trips that the work was done.

Under this head could be included a host of minor details of which I have made no mention in my monthly reports. As a health official, one is called upon daily to answer questions in connection with sanitary matters, and to attempt to keep track of all these matters would be to take up valuable space uselessly and make the annual report long and tiresome.

Suffice it to say that I have at all times tried to do my duty as I saw it, and to furnish enlightenment where I could do so. If at times I have failed to attain the results most desired, I comfort myself with the thought that I did accomplish some things during the year, and that the things accomplished may be the means of saving a life here and there, or even preventing a few cases of preventable diseases.

CONCLUSION

In conclusion I will state briefly some of the things which my observation has shown me are needed in my district. These things I feel sure will apply, also, to other sections of the State as well.

First—Dairy regulation which should be under the supervision and control of the State Board of Health. I will not suggest a plan for carrying out this work, but will simply point out the urgent need for such Dairy Regulation.

Second—A Revision of the law providing for inspection of school children, and a provision of sufficient funds to make it an assured success. By decreasing the size of each sanitary district, and increasing the number of Assistants to the State Health Officer, this work could be done by them, and the "Follow Up Work" could be done by the State Board of Health District Nurses, providing there were more of them.

Third—If possible, I believe there should be a certain uniformity in municipal health administration, and if it would be constitutional, I would respectfully recommend that a bill be presented to the legislature making it a pre-requisite to the granting, or holding, of a city, or town charter, that such city or town conform with certain standards as to health administration, and furthermore, that such city or town health administration be under the direct supervision of the State Board of Health. By this plan it seems a city could be held responsible for violations of statutes relating to public health within her corporate limits.

As a reward for a work well done, and as an inducement to other municipalities, I wish to state that at the time of my last regular inspection, Eau Gallie, Brevard County, was the most sanitary town in my district.

As a final word in closing, I wish to especially commend the two nurses in my district, Mrs. Susan Vorhees and Miss Irene R. Foote. In reporting that health conditions in my district are much improved during the past year, I feel this report would not be nearly so favorable were it not for the fact that these two nurses co-operated with me in such an efficient manner.

To you, Doctor Porter, I wish also to express my sincere appreciation for the thoughtful consideration you have always shown me. I believe your system of encouraging independent thought and action has contributed more than anything else to making the relations between the Executive Office and the field men as pleasant as they have been.

Respectfully yours,
MAURICE E. HECK, M. D.,
Assistant to the State Health Officer of Florida.

REPORT OF DR. E. M. BREVARD,

Assistant to the State Health Officer, West Central District

TALLAHASSEE, FLA., January 1, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.

DEAR DOCTOR:

I have the honor of submitting my report of the West Central District from May 1st to December 31st, 1916. During this time I have covered the district, and am glad to be able to state that as a whole, the health of the district has been very good. The number of communicable diseases has been quite small.

The only epidemic to occur in this district was in Monticello, where diphtheria was prevalent during the month of November. The clinical and carrier cases were promptly isolated and treated, and since that time there has been no more trouble.

The number of pellagra cases seems to be decreasing. There have been very few cases of typhoid fever in this district during the past season. There were a few cases of scarlet fever in Tallahassee but no epidemic. There are a few cases of chicken pox in Tallahassee at the present time but of a very mild type. I have seen two cases of anterior poliomyelitis during this time, one case ten miles from Perry with Dr. O'Quinn on July 23rd and one nine miles from Quincy with Dr. Phillips on December 28th, both being sporadic cases. During the past summer there were a number of cases of hydrophobia among dogs both in Leon and Gadsden Counties. These dogs and the animals bitten were promptly killed. A number of persons were bitten but all who were, received the Pasteur treatment. One negro man near Havana failed to secure the treatment and died with hydrophobia. Below I submit an account of my work from May 1st to December 31st, 1916.

Respectfully,
E. M. BREVARD,
Assistant to State Health Officer.

May	Tallahassee: Routine work, office of Assistant to the State Health Officer.
June	Tallahassee: Routine work, office of Assistant to the State Health Officer. Conference with city physician. Sanitary inspection of city and in county. Management of pellagra and hookworm cases.
	Woodville, Wakulla, St. Marks, Midway: Investigation sanitary and health conditions.
	Greenville: Investigation of eruptive diseases.
	Monticello: Inspection of water works and investigation of sanitary conditions. Conference with city physician.
	Quincy: Inspection sanitary conditions; conference with city physician.
	Crawfordville: Treatment of cases of pellagra. Investigation sanitary and health conditions.
July	Tallahassee: Routine work, office of Assistant to the State Health Officer. Sanitary inspection of Tallahassee. Inspection of grocery stores, etc., in connection with screening law. Following communicable diseases found: typhoid fever 5 cases, dysentery 5.
	New Port: Inspection of cottages and privies.
	Marianna: Conference with physicians and city health officer.
	Panama: Sanitary inspection of town; conference with physicians and local health officer.
	Millville: Sanitary inspection of town; conference with physicians.
	St. Andrews: Sanitary inspection of town; conference with local health officer.
	Lynn Haven: Sanitary inspection of town; conference with local health officer.
August	Tallahassee: Routine work, office of Assistant to the State Health Officer. Collection data for Vital Statistics Department. Investigation cases of dog bite; dog's head sent to laboratory for examination.
	Crawfordville: Collection of data for Vital Statistics Department.
	Helen: Investigation of typhoid fever.
	Carrabelle: Sanitary inspection.
	Apalachicola: Sanitary inspection. Conference with city physician and mayor in regard to screening; shrimp factories ordered screened.
	Port St. Joe: Inspection of town, and conference with city physician.
	Perry: Investigation case anterior poliomyelitis.
	Columbia: Investigation typhoid fever outbreak.
September	Tallahassee: Routine work, office of Assistant to the State Health Officer. Treatment of indigent hookworm cases; assistance to local physicians in administering Pasteur treatment and giving anti-typhoid vaccine. Inspection to see that sanitary laws observed. Assistance to Sanitary Engineer of State Board of Health in inspecting sewerage system of Tallahassee and in obtaining necessary data on subject.
	Marianna: Sanitary inspection of town.
	Blountstown: Sanitary inspection of town; conference with city health officer and local physicians regarding health matters.
	Sanborn: Conference with attending physician relative to diagnosing case of pellagra.
	Bristol: Sanitary inspection of town; conference with local physicians regarding health matters.

	Sirmans: Called to diagnose eruptive disease; impossible to do so, as patients buried and no more cases.
	Greenville: Sanitary inspection of town.
October	Tallahassee: Routine work, office of Assistant to the State Health Officer. Screening notices served on 9 fruit dealers. Hookworm treatment given to 4 patients. Anti-typhoid vaccination given to 3 patients. Dog's head sent to laboratory for examination. Two sanitary nuisances ordered abated. Inspection of stores in regard to Screening law.
	Centerville: Investigation reported typhoid fever; no cases found; Widal reaction negative.
	Havana: Sanitary inspection of town.
	Quincy: Sanitary inspection of town.
	Chattahoochee: Sanitary inspection of Florida Hospital for the Insane.
	Monticello: Sanitary inspection of town.
	Lloyds: Sanitary inspection of town.
	Arran: Investigation of typhoid fever outbreak; full directions given for control; anti-typhoid vaccine furnished for eight patients.
	Marianna: Investigation of reported eruptive disease; none found. Sanitary inspection of high school building; matter of sanitation taken up with school authorities. Sanitary inspection of reform school.
November	Tallahassee: Routine work office of Assistant to the State Health Officer. Three notices to abate nuisances served. Treatment given six hookworm cases. Inspections for observance of screening laws. Assistance in management of diphtheria cases.
December	Tallahassee: Routine work, office of Assistant to the State Health Officer. Notices served on fruit dealers in regard to screening. Conference with mayor and chief of police in regard to screening ordinances.

REPORT OF DR. J. KNOX SIMPSON,

Acting Assistant to the State Health Officer, In Charge of Orthopedic Work

Jacksonville, Fla., January 1st, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.

Dear Doctor Porter:

As acting assistant to the State Health Officer during the leave of absence of Dr. R. C. Turck, I beg to submit the appended report of the activities of the Orthopedic Department of the Board of Health for the year 1916.

I assumed charge of the work on November 1st, therefore the major part of this report is based upon Dr. Turck's records of the first ten months of the year.

I wish to say in the beginning, that before becoming connected with the department, even though more or less familiar with the work being done, I had no idea how much work of this kind there was to be done, and to what a splendid extent this department is benefiting the crippled children of the State.

It has been my earnest endeavor to continue Dr. Turck's memorable work in a way which would not suffer too much by comparison with his, and I have been gratified to see the work progress smoothly, and the results maintain satisfaction from a surgical point of view. I have however, notwithstanding my short acquaintance with the work, been very much impressed with the need of adding to the department certain things which are essential in attaining the end for which the service was created: The transformation of hopeless crippled children into useful self-supporting citizens. The purely surgical phase of the work is quite satisfactory with the present affiliations, and I feel that the little patients have every attention that an efficient, willing and interested corps of hospital officers and nurses can give them; but as dwelt upon in Dr. Turck's report of last year, there is a crying need for special mental and physical training of the children during their hospital residence. There should be a school maintained for the purpose of teaching them manual training, sewing, domestic science, and the purely didactic subjects, as well as a gymnasium for the purpose of special muscle training. At present when the deformities are corrected, the children are forced to return home, just at the beginning of a new life for them, and be placed in the hands of willing, but as a rule, unintelligent home care, where they are apt to either relapse into their former physical infirmities, or just as bad, be made by misdirected attentions and kindnesses into unconstructive mental dwarfs. If they could during the time necessary for their physical corrections, be taught the work best fitted for their abilities, they could be truly turned out of the institution "made over."

The idea which you expressed to me some days ago about building a home on or near to the property of St. Luke's Hospital, I think could be developed into a most happy solution of the present problem. Such a home, equipped with a school room, work shop, sewing room, gymnasium, etc., would take the children away from the general hospital atmosphere, and place them in a more homelike one, besides being near enough to give them the advantages of hospital treatment for short periods when it became necessary. The home could be maintained for a good deal less expense per child, per day, than is being paid the hospital, because of not having to share the hospital's overhead expense. Figures taken from homes similar to the above in different parts of the country, and gained in a recent conversation with the superintendent of The Industrial Home for Crippled Children, of Pittsburgh, Pa., indicate that the average cost per child, per day, including all teachers, and maintenance of the teaching departments is about one dollar. This is based upon an average of twenty children, or about our present need.

In closing the report I wish to thank in behalf of Dr. Turck and myself, all those who have by their attentions added to the happiness of the children, and to the pleasure of the work, and to express to you my appreciation of your kindnesses to me during my association with the department.

Respectfully submitted,

J. Knox Simpson, M. D.,
Acting Assistant to the State Health Officer.

Patients remaining under treatment from 1915	15
Admitted for treatment during 1916	21
Examined, not admitted	1
White.........34 Colored......... 3	37
Discharged cured during 1916	11
Discharged improved during 1916	9
Discharged unimproved during 1916	4
Died during 1916	2
Remaining under treatment January 1st, 1917	11
	37

PATHOLOGICAL CONDITIONS TREATED

Tuberculosis of bone (Spine, 3; Hip, 2; Ilium, 1)	6
Lateral curvature spine	2
Poliomyelitis	7
Club foot	8
Spastic paralysis	4
Bow legs	2
Ankylosis of knee	1
Osteomyelitis	5
Cerebral tumor	1
Periostitis tibiae	1
Traumatic myositis	1
Muscular dystrophy	1

REPORT OF ORTHOPEDIC WORK, STATE BOARD OF HEALTH, DURING YEAR 1916

Names	In St. Lukes Jan. 1, 1916	In Brewster (col.) Jan. 1, 1916	Outside Treatment Jan. 1, 1916	Applications Received	Admitted St. Lukes	Admitted Brewster	Admitted for Office Treatment	Examined, Not Admitted	Total Cases During Year	Operating Plaster Work Special Treatment Etc.	Date Discharged and Condition	Diagnosis	Under Treatment January 1, 1917
A. N.	1	..	..	..	..	..	..	..	1	Bradford frame, plaster jacket	Died 3-1-16	Tbc. spine	..
F. P.	1	..	..	..	..	..	..	..	1	Plaster casts		Tbc. hip	1
H. M.	1	..	..	..	..	..	..	..	1	Operation on bone, casts		Tbc. Ilium	1
M. P.	1	..	..	..	..	..	..	..	1	Plaster jackets	In braces 3-27-16.	Lat. curvature Spine.	..
R. F.	..	1	..	..	..	..	..	..	1	Tenot. and bone reset, casts	Improved 1-31-16	Polio deformity	..
A. H.	1	..	..	..	..	..	..	..	1	Op. on bone joints and tendons	Improved 1-27-16	Polio deformity	..
B. K.	1	..	..	..	..	..	..	..	1	Plaster casts	Cured 8-14-16	Club feet	..
W.W.	1	..	..	..	..	..	..	..	1	Braces		Polio paralysis	..
B. Y.	..	..	..	..	..	..	1	..	1	Braces	Moved 3-1-16	Polio paralysis	..
R. W.	1	..	..	..	..	..	..	..	1	Tenot. and casts		Spastic paralysis	1
R. G.	1	..	..	..	..	..	..	..	1	Op. on bone and tend., casts	Cured 1-25-16	Club feet	..
C. W.	1	..	..	..	..	..	..	..	1	Op. on bone and tend., casts	Cured 2-26-16	Club feet	..
O. D.	1	..	..	..	..	..	..	..	1	Bradford frame		Tbc. Spine	1
S. W.	..	1	..	..	..	..	..	..	1	Casts, etc	In braces, Improved 2-6-16	Curvature spine	..
R. I.	1	..	..	..	..	..	..	..	1	Osteo., casts	Cured 1-27-16	Bow legs	..
D. W.	1	..	..	..	..	..	..	..	1	Op. bones and tendon., casts	Cured 5-30-16	Club feet	..
L. H.	..	..	1	..	..	..	..	..	1	Braced shoes	Cured 3-15-16	Club feet	..
F. B.	..	..	..	..	..	1	..	..	1	Arthoplasty Knee		Ankylosis knee	..
F. M.	..	..	..	1	..	..	..	..	1	Osteotomies and casts	Left 2-16-16	Bowlegs	..
W. H.	..	..	..	..	1	..	..	..	1	Bone resection	Improved 3-29-16	Osteomyelitis	..
S. B.	..	..	..	..	1	..	..	..	1	Tenotomies and tendon transplantation	Transferred improved 4-28-16.	Polio. paralysis	..

REPORT OF ORTHOPEDIC WORK, STATE BOARD OF HEALTH, DURING YEAR 1916—Continued

Names	In St. Lukes Jan. 1, 1916	In Brewster (col.) Jan. 1, 1916	Outside Treatment Jan. 1, 1916	Applications Received	Admitted St. Lukes	Admitted Brewster	Admitted for Office Treatment	Examined, Not Admitted	Total Cases During Year	Operating Plaster Work Special Treatment Etc.	Date Discharged and Condition	Diagnosis	Under Treatment January 1, 1917
A. P.	..	..	..	1	1	..	..	..	1	Daily dressings		Osteomyelitis	1
J. P.	..	..	..	1	..	..	..	1	..		Not admitted	Poliomyelitis	..
W. S.	..	..	..	1	1	..	..	..	1	Tenot. and cast	Transferred 4-16-16	Club feet	..
C. D.	..	..	..	1	1	..	..	..	1	Op. brain decompression	Died 6-1-16	Cerebral tumor	..
H. R.	..	..	..	1	1	..	..	..	1	Cast	Cured 9-30-16	Tbc. hip	..
L. S.	..	..	..	1	1	..	..	..	1	Tendon transplant	Cured 7-7-16	Polio. paralysis	..
D. M.	..	..	..	1	1	..	..	..	1	Tenorrhaphy and osteotomy cast	Cured 7-3-16	Club feet	..
A. F.	..	..	..	1	1	..	..	..	1	Skin graft, daily dressing	Cured 9-7-16	Legulcers periostitis	..
I. T.	..	..	..	1	1	..	..	..	1	Aetragalectomy casts	Cured 9-27-16	Spastic paralysis	..
T. G.	..	..	..	..	1	..	..	..	1		Not treated	Spastic paralysis	..
I. P.	..	..	..	1	1	..	..	..	1	Bone resection, daily dressings		Osteomyelitis	1
A. T.	..	..	..	1	1	..	..	..	1	Curreting Necrosis Tibia		Osteomyelitis Tib.	..
G. G.	..	..	..	..	1	..	..	..	1	Astragalectomy left foot		Left club foot	1
C. B.	..	..	..	1	1	..	..	..	1	Tenoplasty flexor tendons, left forearm		Traumatic myositis	1
W. H.	..	..	..	1	1	..	..	..	1	Examination		Muscular dystrophy	1
W. L.	..	..	..	1	1	..	..	..	1	Dressings and Xray Ex.		Chr. osteomyelitis tarsus	..
C. P.	..	..	..	1	1	..	..	..	1	Dressings and Xray Ex.		T.B. spine with Dorsal kyphosis and T. B. Hip	1
Total	13	2	1	16	18	1	1	1	37		24		11

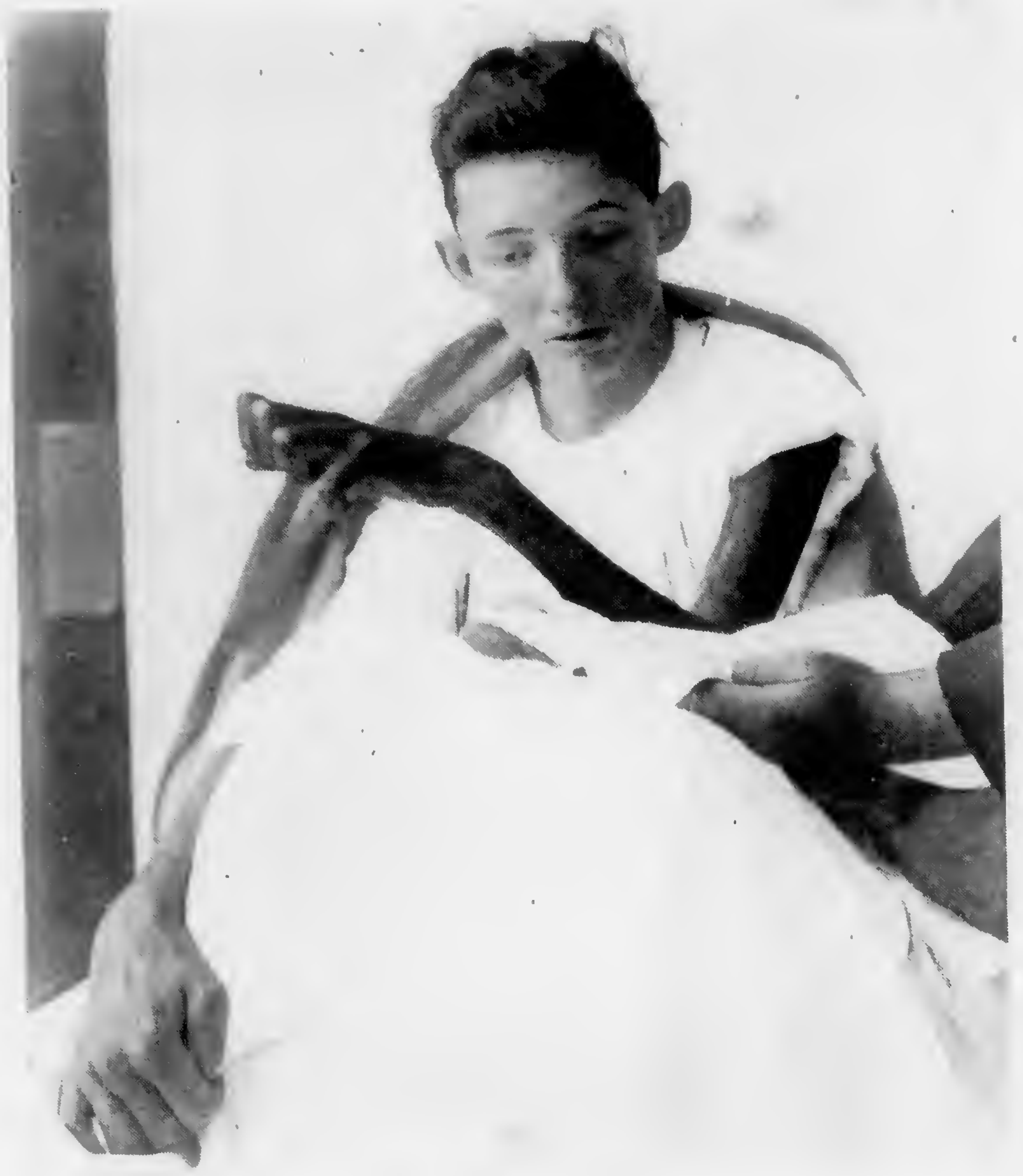


Fig. No. 1

C. B. A case of contracture of the flexor tendons of the wrist, due to shortening of the muscles of the forearm. The fingers could not be extended any more than is shown in the photograph, and the hand was perfectly useless. One of the nerves was also caught in a scar at the elbow, and gave him constant pain in the hand.

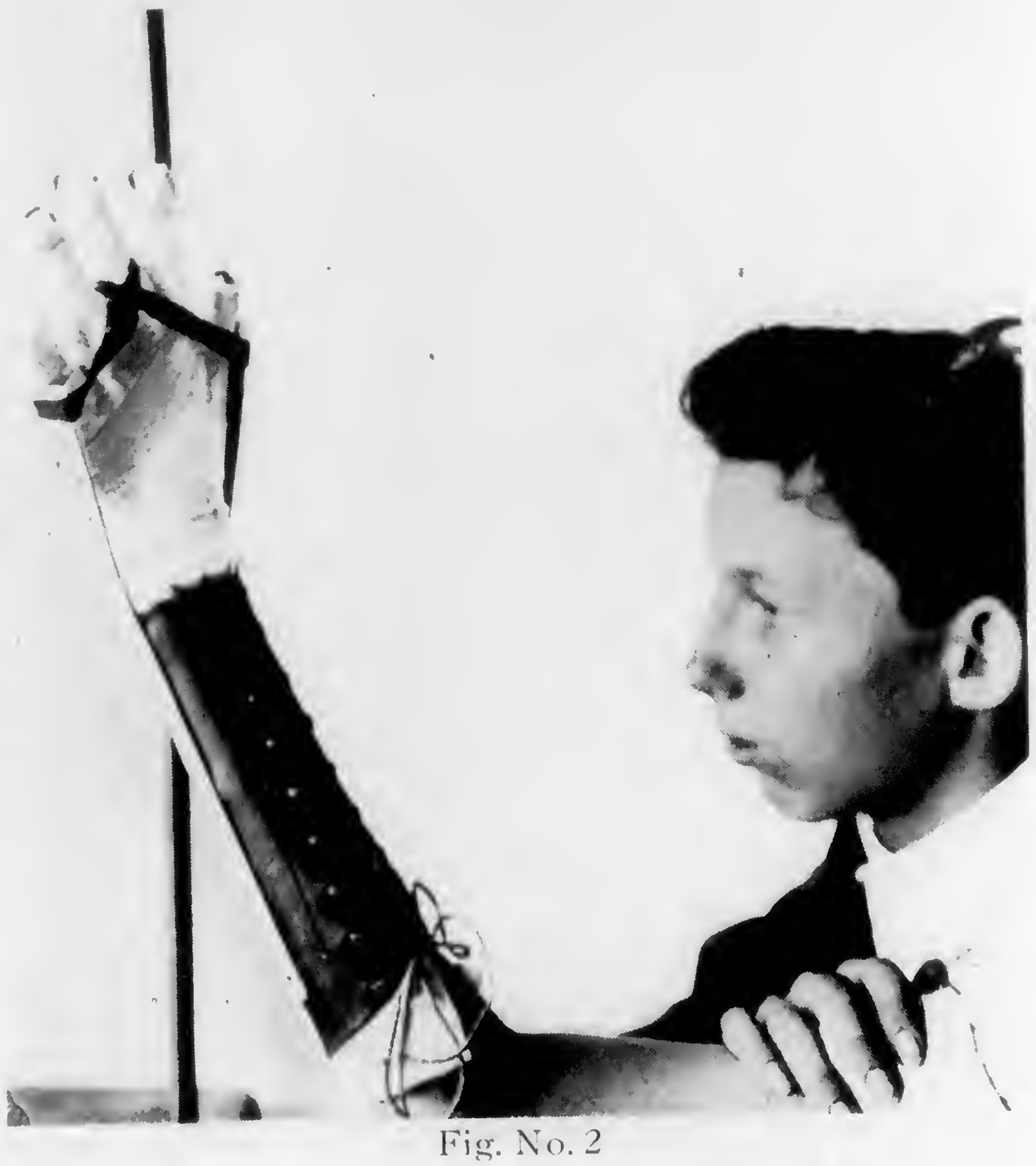


Fig. No. 2

C. B. After the tendons has been lengthened by splicing at the wrist, and the nerve had been dissected out of the scar tissue, and put into a new channel made of transplanted fat. He is wearing a splint to maintain extension of the fingers.

REPORT OF ORTHOPEDIC WORK, STATE BOARD OF HEALTH, DURING YEAR 1916—Continued

Names	In St. Lukes Jan. 1, 1916	In Brewster (col.) Jan. 1, 1916	Outside Treatment Jan. 1, 1916	Applications Received	Admitted St. Lukes	Admitted Brewster	Admitted for Office Treatment	Examined. Not Admitted	Total Cases During Year	Operating Plaster Work Special Treatment Etc.	Date Discharged and Condition	Diagnosis	Under Treatment January 1, 1917
A. P.	..	..	..	1	1	..	..	..	1	Daily dressings		Osteomyelitis	1
J. P.	..	..	..	1	..	..	..	1	..		Not admitted	Poliomyelitis	..
W. S.	..	..	..	1	1	..	..	..	1	Tenot. and cast	Transferred 4-16-16	Club feet	..
C. D.	..	..	..	1	1	..	..	..	1	Op. brain decompression	Died 6-1-16	Cerebral tumor	..
H. R.	..	..	..	1	1	..	..	..	1	Cast	Cured 9-30-16	Tbc. hip	..
L. S.	..	..	..	1	1	..	..	..	1	Tendon transplant	Cured 7-7-16	Polio. paralysis	..
D. M.	..	..	..	1	1	..	..	..	1	Tenorrhaphy and osteotomy cast	Cured 7-3-16	Club feet	..
A. F.	..	..	..	1	1	..	..	..	1	Skin graft, daily dressing	Cured 9-7-16	Legulcers periostitis.	..
I. T.	..	..	..	1	1	..	..	..	1	Aetragalectomy casts	Cured 9-27-16	Spastic paralysis	..
T. G.	..	..	..	..	1	..	..	..	1		Not treated	Spastic paralysis	..
I. P.	..	..	..	1	1	..	..	..	1	Bone resection, daily dressings		Osteomyelitis	1
A. T.	..	..	..	1	1	..	..	..	1	Curreting Necrosis Tibia		Osteomyelitis Tib.	..
G. G.	..	..	..	..	1	..	..	..	1	Astragalectomy left foot		Left club foot	1
C. B.	..	..	..	1	1	..	..	..	1	Tenoplasty flexor tendons, left forearm		Traumatic myositis	1
W. H.	..	..	..	1	1	..	..	..	1	Examination		Muscular dystrophy	1
W. L.	..	..	..	1	1	..	..	..	1	Dressings and Xray Ex.		Chr. osteomyelitis tarsus	..
C. P.	..	..	..	1	1	..	..	..	1	Dressings and Xray Ex.		T.B. spine with Dorsal kyphosis and T. B. Hip	1
Total	13	2	1	16	18	1	1	1	37		24		11

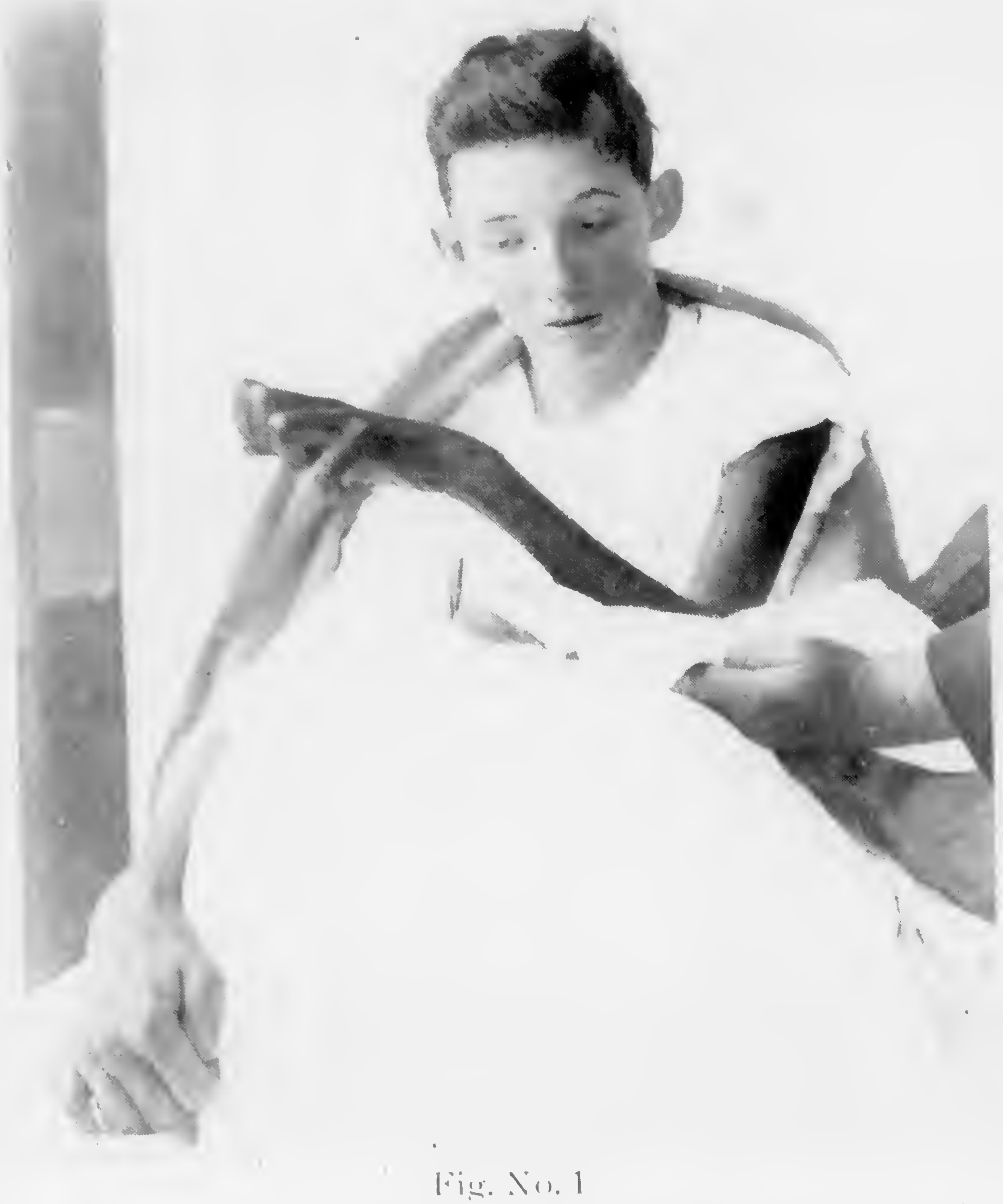


Fig. No. 1

C. B. A case of contracture of the flexor tendons of the wrist, due to shortening of the muscles of the forearm. The fingers could not be extended any more than is shown in the photograph, and the hand was perfectly useless. One of the nerves was also caught in a scar at the elbow, and gave him constant pain in the hand.

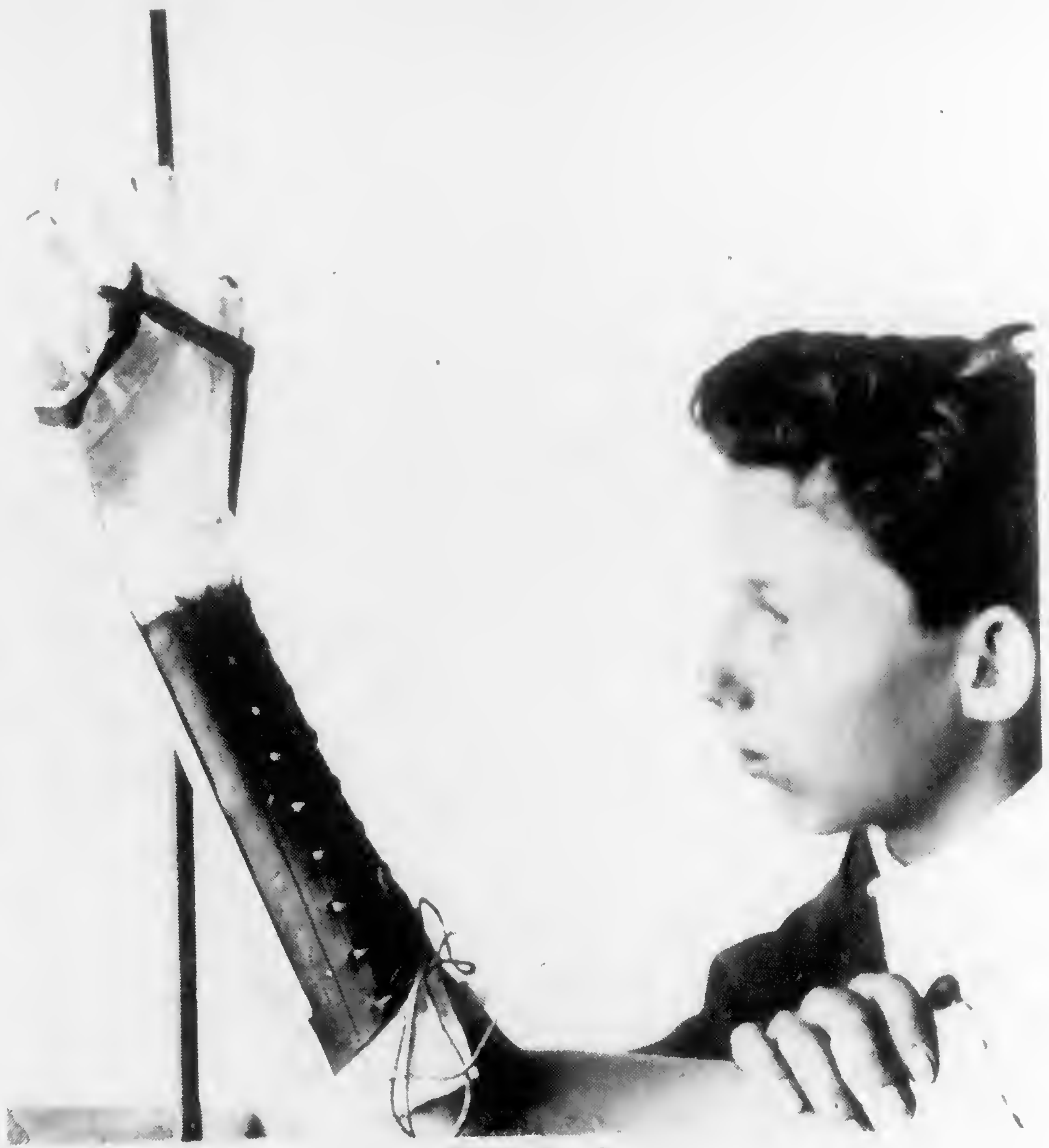


Fig. No. 2

C. B. After the tendons has been lengthened by splicing at the wrist, and the nerve had been dissected out of the scar tissue, and put into a new channel made of transplanted fat. He is wearing a splint to maintain extension of the fingers.

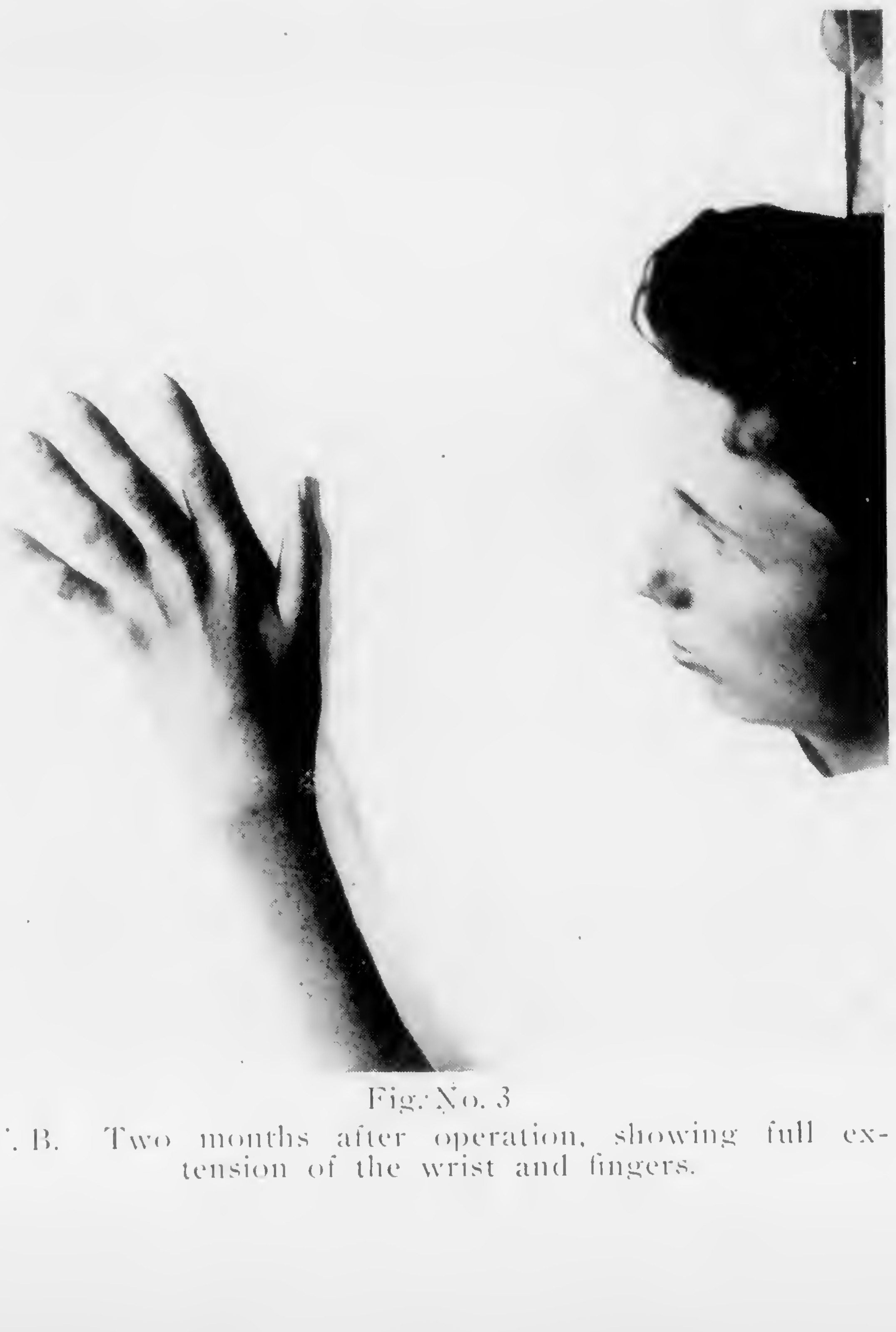


Fig. No. 3

C. B. Two months after operation, showing full extension of the wrist and fingers.

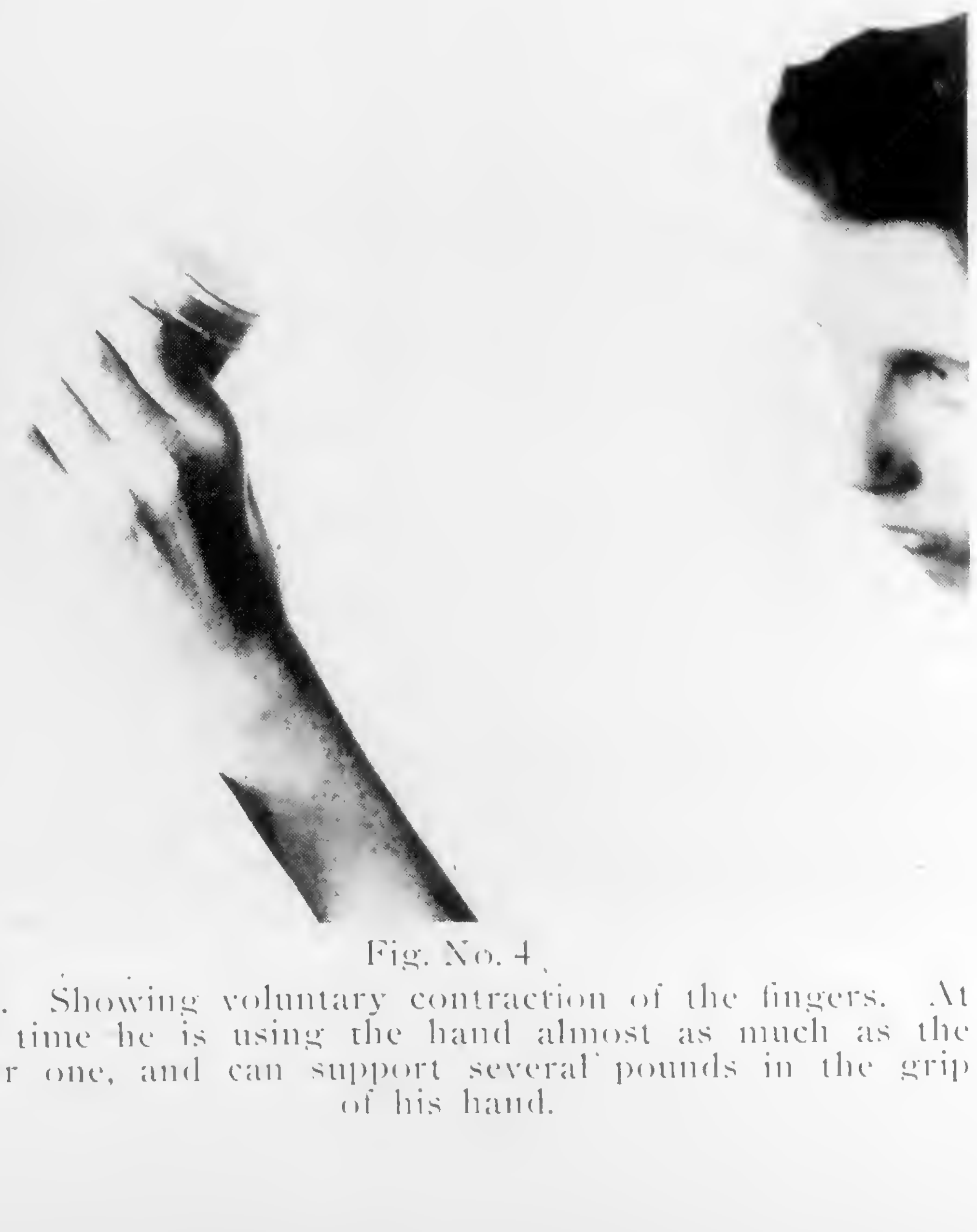


Fig. No. 4

C. B. Showing voluntary contraction of the fingers. At this time he is using the hand almost as much as the other one, and can support several pounds in the grip of his hand.

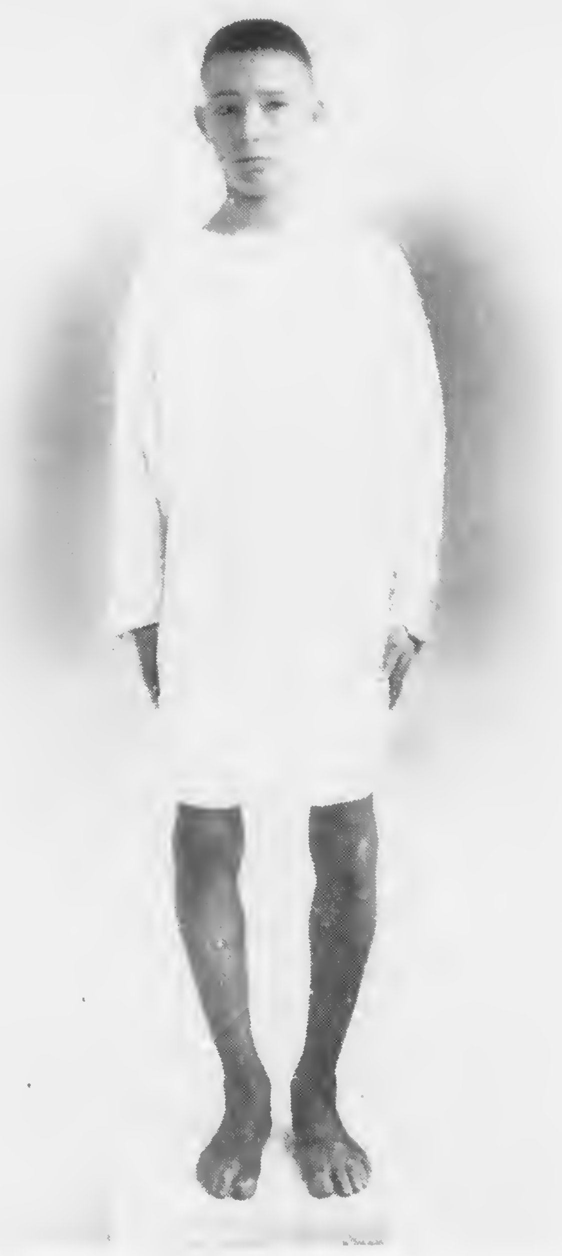


Fig. No. 1
F. M. A case of bow legs.

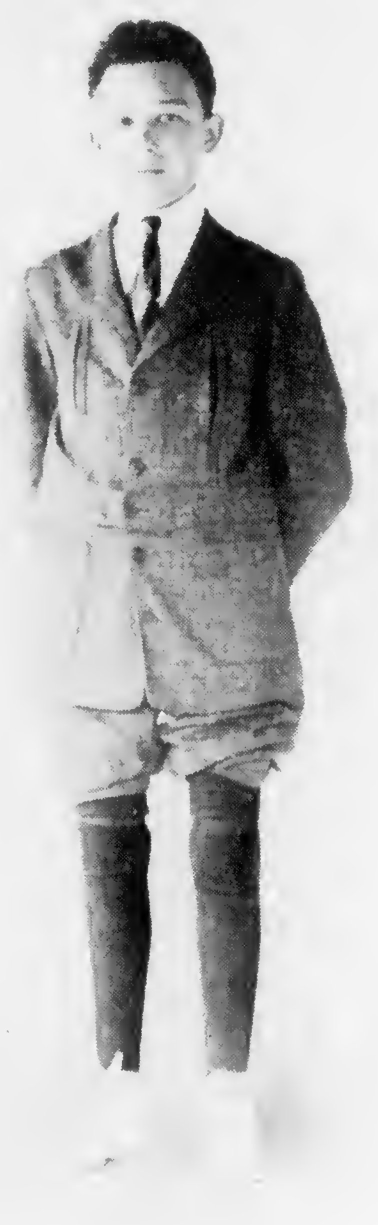


Fig. No. 2
F. M. Three months after operation on both legs for the purpose of straightening them.

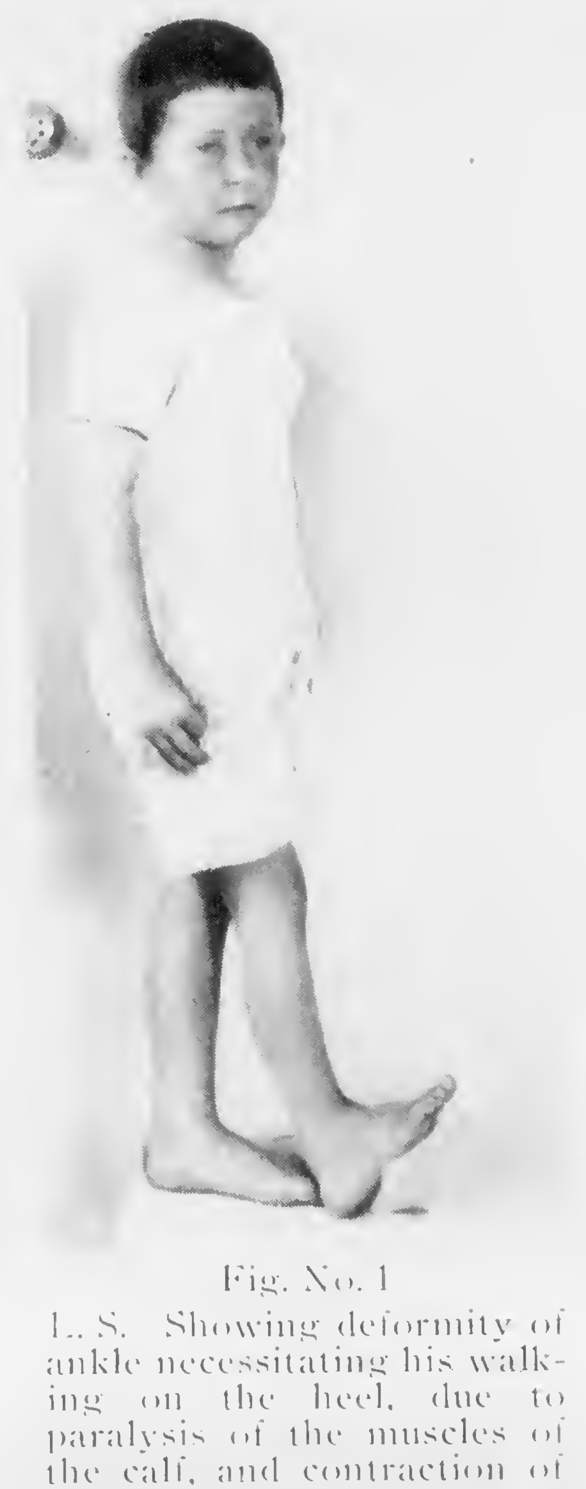


Fig. No. 1

L. S. Showing deformity of ankle necessitating his walking on the heel, due to paralysis of the muscles of the calf, and contraction of the muscles of the front of the leg.

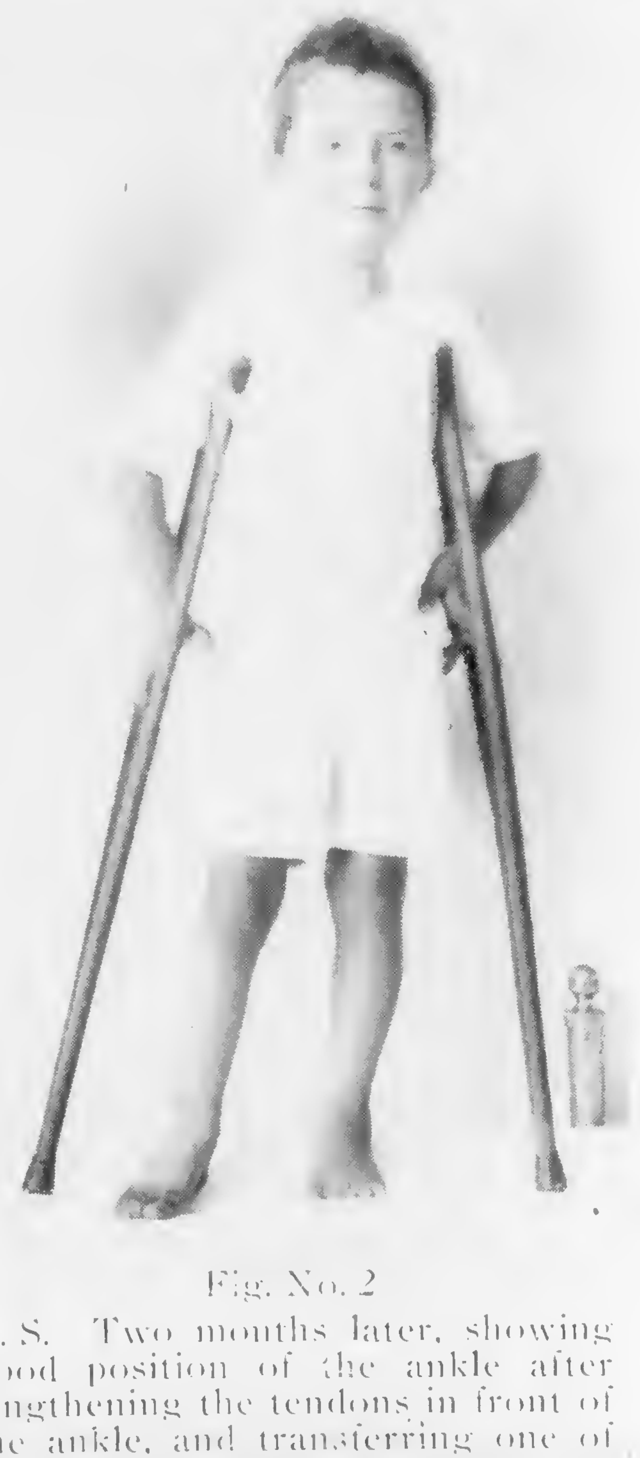


Fig. No. 2

L. S. Two months later, showing good position of the ankle after lengthening the tendons in front of the ankle, and transferring one of the strong muscles from the front to the back of the ankle, to help out the weak ones. He now walks with his foot flat on the floor.

REPORT OF DR. E. G. BIRGE,

Bacteriologist, Jacksonville Laboratory

Jacksonville, Fla., January 6th, 1917.

Dr. Jos. Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of Bureau of Communicable
Diseases.)

Dear Doctor:

I beg to submit herewith the annual report for the work done in the Central Laboratory for the year 1916.

There was a slight increase in the total number of specimens examined over 1915. There was a marked decrease in the examinations for diphtheria due to the fact that diphtheria was not prevalent during the year.

Several changes were made in rearranging the work of the central laboratory; the pathological work was transferred to the Miami laboratory; the analysis of water and sewage was transferred to the Bureau of Sanitary Engineering, while the routine examinations of blood for the detection of syphilis were transferred from the branch laboratories, except Tampa, to the central laboratory.

The routine examinations of blood for the detection of syphilis together with the slight increase in other specimens has more than made up for the decrease in the number of diphtheria examinations. The making of Wassermann examinations routine is probably the most important step in advance which the laboratories have made in some time. The number of specimens examined this year has been more than satisfactory and I expect that the number will materially increase in the near future.

While it is too early to make any definite statements, the results so far indicate that approximately eighteen to twenty per cent of all inhabitants are infected. In this connection it is recommended that a new form of data blank be issued so that more accurate information may be obtained for statistical purposes and that the efficiency of treatment received by patients may be followed.

The examinations for hookworm infection in this laboratory are altogether too few in proportion to the importance of the disease. It is recommended, therefore, that steps be taken to impress the physicians that a routine examination be made for infection with intestinal parasites, especially among school children.

In spite of the campaign now being waged against tuberculosis, the number of examinations made in this laboratory has not materially increased. I believe that the laboratory examinations may be used to greater advantage at the present time in furthering this campaign and I would suggest that the possibility of a complement fixation test for the diagnosis of this disease be considered.

In conclusion, I wish to commend the work of my colleagues in the laboratory and to recommend that the salaries of Mr. Homer D. Venters, First Assistant Bacteriologist, and Mr. E. T. Copp, Technician in the laboratory, be increased.

Appended is a tabular statement of the work done during the year.

Respectfully submitted,

E. G. BIRGE,
Bacteriologist.

STATEMENT OF SPECIMENS EXAMINED

In the Central Laboratory, Jacksonville, Florida, 1916

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Grand Total
Animal Parasites:														
Hookworm:														
Positive ..	59	73	51	55	51	75	71	129	92	73	96	57	882	
Negative .	120	124	120	86	117	134	134	148	127	114	116	106	1,446	
Unfit	..	..	..	..	..	..	2	1	2	1	1	1	8	
Ameba:														
Positive ..	..	1	..	..	..	..	..	..	..	..	..	..	1	
Negative .	2	9	5	1	4	..	1	..	..	1	3	2	28	
Ascaris	2	1	1	1	2	2	1	2	1	6	3	4	26	
Oxyuris	..	4	1	1	..	1	..	..	1	2	1	..	11	
Strongyloides	..	..	..	..	..	..	1	2	..	..	..	1	4	
Tapeworm ..	1	..	3	5	1	1	3	4	..	4	..	..	22	
Trichiuris ..	..	1	4	..	..	6	3	8	2	2	3	2	31	2,459
Diphtheria:														
Swabs:														
Positive ..	11	3	2	2	2	3	7	11	16	20	9	7	93	
Negative .	42	44	39	14	20	25	20	27	44	80	57	45	457	
Doubtful .	3	4	3	..	..	..	..	1	3	3	2	..	19	
Cultures:														
Positive ..	89	74	26	7	1	15	15	34	91	191	125	46	714	
Negative .	445	283	148	62	39	39	51	74	1,434	918	886	208	4,587	
Doubtful .	5	2	..	..	1	..	1	..	..	1	..	..	10	5,880
Gonorrhoea:														
Positive ..	30	23	37	27	34	28	34	27	16	28	26	29	339	
Negative .	32	36	46	60	53	51	64	73	45	42	60	50	612	
Doubtful .	9	2	4	1	..	2	1	..	..	2	..	3	24	975
Malaria:														
Positive ..	13	5	..	1	4	12	11	13	20	13	13	10	115	
Negative .	133	120	176	156	208	222	267	266	190	161	129	140	2,168	
Unsatisfactory	..	..	1	1	2	6	..	4	7	6	2	2	31	2,314

STATEMENT OF SPECIMENS EXAMINED

In the Central Laboratory, Jacksonville, Florida, 1916—Continued

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Grand Total
Pathological Specimens:														
Malignant	5	5	7	3	10	4	1	3	..	..	..	..	38	
Non-Malignant	9	10	6	21	7	10	2	1	..	..	..	..	66	
Unsatisfactory	2	..	2	2	4	..	..	1	..	..	..	..	11	115
Rabies:														
Dog:														
Positive ..	3	2	4	2	5	4	5	2	1	1	3	3	35	
Negative ..	2	2	1	1	7	6	3	3	4	1	3	3	36	
Doubtful .	..	..	1	2	1	..	2	..	1	..	..	..	7	
Cat:														
Positive ..	..	..	..	..	..	..	..	..	..	..	..	1	1	
Negative .	1	2	..	1	2	3	..	..	..	2	1	1	13	
Calf:														
Negative .	1	..	..	..	..	..	..	..	..	..	..	..	1	
Cow:														
Positive ..	..	..	..	1	..	..	..	..	..	..	..	..	1	
Guinea Pig:														
Negative .	..	..	2	..	..	..	..	..	..	..	..	..	2	
Pig:														
Negative .	..	..	..	..	..	..	..	..	..	1	..	..	1	
Rabbit:														
Positive ..	..	2	1	1	..	..	..	..	..	..	..	..	4	
Negative .	..	1	..	1	2	1	..	..	..	..	..	..	5	
Skunk:														
Positive ..	..	..	..	..	..	1	..	..	..	..	..	..	1	107
Tuberculosis:														
Positive ..	37	41	37	38	41	41	25	15	20	34	43	32	404	
Negative .	147	106	160	116	127	105	85	104	105	77	97	103	1,332	
Unsatisfactory	2	3	6	2	1	3	5	1	2	..	5	..	30	1,766

STATEMENT OF SPECIMENS EXAMINED

In the Central Laboratory, Jacksonville, Florida, 1916—Continued

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Grand Total
Typhoid:														
Positive ..	17	18	33	9	32	18	53	31	21	15	12	26	285	
Negative .	98	109	148	147	182	229	228	259	148	153	98	109	1,908	
Incomplete	2	5	11	7	24	9	19	36	35	19	5	6	178	2,371
Para-Typhoid:														
Positive ..	..	..	..	..	..	..	..	..	1	..	..	..	1	
Negative .	2	1	3	2	..	..	2	11	1	2	4	6	34	35
Urinalysis	16	8	..	1	..	..	..	..	2	..	..	..	27	27
Water (for Sewage Contamination):														
Positive ..	16	12	16	12	11	25	29	17	27	17	5	..	187	
Negative .	7	24	30	31	17	24	20	34	24	55	22	2	290	
Chemical Analysis:														
Positive ..	..	..	..	..	5	2	..	..	..	..	..	..	7	
Negative .	..	..	..	..	7	3	2	..	..	..	..	..	12	496
Wassermann:														
Positive ..	5	32	32	44	39	75	132	144	123	96	96	125	943	
Negative .	4	16	48	45	52	185	120	206	161	175	147	236	1,396	
Doubtful .	..	1	5	9	4	..	10	4	2	..	10	1	46	
Anti-complementary..	..	..	..	..	..	..	..	..	6	26	30	23	85	
Unsatisfactory ..	..	..	21	3	11	39	11	26	13	4	13	5	146	
Experimental ..	..	..	51	..	..	..	..	..	..	..	..	..	51	2,667
Gonorrhoea Complement Fixation:														
Positive ..	3	..	..	5	2	..	1	6	2	..	2	2	23	
Negative .	3	1	6	15	1	2	..	3	4	15	6	8	64	
Doubtful .	..	..	..	4	..	..	..	..	..	..	..	..	4	
Anti-complementary ..	..	..	..	..	..	..	..	..	..	..	..	1	1	92

STATEMENT OF SPECIMENS EXAMINED
In the Central Laboratory, Jacksonville, Florida, 1916—Continued

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Grand Total
Miscellaneous:														
Animal Inoculation	2	8	1	1	14	6	3	2	2	1	1	..	41	
Autogenous Vaccine ..	5	1	..	..	..	..	..	..	..	..	..	..	6	
Blood Count:														
Differential	17	9	21	17	17	15	11	12	2	4	..	..	125	
Plain	2	..	3	..	..	..	..	..	..	..	..	..	5	
Leprosy:														
Positive ..	..	..	..	..	..	..	1	..	..	..	..	..	1	
Negative .	..	1	..	..	..	..	1	..	..	..	..	..	2	
Filaria	1	..	..	..	..	..	..	..	1	..	..	..	2	
Meningitis	..	1	..	..	..	..	..	..	..	..	..	..	1	
Myiasis	..	..	..	1	1	..	..	..	..	..	..	..	2	
Ophthalmia:														
Positive ..	1	..	..	..	1	..	6	..	..	3	2	1	14	
Negative .	..	1	..	1	..	2	1	2	..	1	..	1	9	
Pleural Fluid..	..	..	..	..	..	..	..	1	3	..	..	..	4	
Spinal Fluid...	..	1	1	..	1	..	..	..	..	..	..	1	4	
Spirochaeta Pallida	1	2	1	2	2	..	2	..	..	2	..	1	13	
Vincents Angina:														
Positive ..	1	4	..	..	2	1	..	..	1	1	1	..	11	
Negative .	..	2	1	..	..	..	..	..	..	..	..	..	3	
Unclassified ..	23	24	10	9	25	16	28	18	25	13	6	5	202	445
	1,431	1,264	1,336	1,036	1,196	1,452	1,495	1,766	2,828	2,386	2,144	1,415	19,749	19,749

REPORT OF DR. H. R. MILLS,
Bacteriologist, Tampa Laboratory

TAMPA, FLA, January 27th, 1917.

Dr. Jos. Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of Bureau of Communicable Diseases.)

DEAR DOCTOR PORTER:

I am enclosing herewith a tabulated statement of the work done in the Tampa Laboratory during 1916.

I think that the physicians very greatly appreciate the action of the Board in making the Wassermann test for syphilis a part of the routine health work. The test is not only employed by the doctors for diagnosis, but also, by repeated examinations, in determining the progress of the cases under treatment. There is one feature of the Wassermann work, however, which could be improved upon, that is in regard to the collection of specimens. A number of the physicians do not realize the importance of having their instruments and glassware which they use in collecting Wassermann samples chemically clean and free from water, which accounts, I believe, for many of the anti-complementary results which we obtain. Wassermann samples coming by mail from out of town are frequently anti-complementary, and I believe it would be best to instruct all out of town physicians, in addition to the precautions mentioned above, to separate the serum from the blood clot before mailing.

Milk analysis has also been added to the work of the laboratory, and we are making the fat test, determination of total solids, and bacterial count at the request of health officers at the various towns in our district. Our work in this connection has shown that the dairies, whose milk we have examined, have been supplying to the public milk of a very low quality with respect at least to the bacterial count. The initial counts have in many cases run up into the millions; and, although subsequent counts have shown improvement, the lowest count we have been able to obtain is 42,000 and our work includes a few samples of milk collected in Tampa. Taking another and smaller city in Florida as an example, these counts are apparently too high. Many of the dairies in that city are supplying milk that counts below 5,000, and, in the cases of two dairies, the count during December was as low as 500.

In August Dr. E. G. Birge, former Assistant Bacteriologist, was promoted to the Directorship of the Central Laboratory and Dr. Harold H. Fox, now Director of the Tallahassee Laboratory, was detailed temporarily to the Tampa Laboratory to fill the vacancy made by the departure of Dr. Birge.

I feel much indebted to Dr. Fox for many useful suggestions pertaining to the laboratory work, particularly in regard to the Widal test. The Widal test which we are now making and which was recommended by Dr. Fox, consists of diluting the blood serum one to twenty with an ordinary white blood cell diluting pipette. One standard loop of this dilution is then mixed with an equal quantity of a twenty-four hour broth culture of typhoid, thus making a dilution of one to forty, and the hanging drop preparation is allowed to stand for an hour before the final reading is made, preferably at incubator temperature. Where the dried blood is submitted instead of the serum we replace with distilled water the serum that has evaporated, estimating the amount by the size of the drop of dried blood.

Since we began to employ this technique in August, our percentage of positive Widals have been reduced from 12½ per cent to 8.4 per cent, and the percentage of incompletes to 6.3 per cent and 5.6 per cent, or the total of positives and incompletes have been reduced from 18.8 to 14 per cent. Formerly we had not been diluting the Widal serum as highly or as accurately. I believe that the results obtained from higher dilutions are more accurate, as it is generally conceded by serologists that dilutions lower than one to forty are less sensative or less specific. In fact, in low dilutions group agglutination is liable to occur, that is clumping for the typhoid colon group in general. Moreover, two or more other organisms will also clump the typhoid bacillus in low dilutions, for example, B. Proteus and Pseudomonas.

On September 16th, Dr. C. E. Roderick relieved Dr. Fox and is now serving in the capacity of Assistant Bacteriologist. Special credit is due Dr. Roderick for the effective way in which he has handled the work here, particularly in the absence of the Bacteriologist in December, during which time Dr. Roderick had entire charge of the laboratory.

I am especially grateful to Mr. Chas. DeArmas, Sanitary Patrolman of Hillsborough County, and to Miss Mary Valdespino, stenographer and interpreter of foreign languages, for their efficient service, and to Dr. C. W. Bartlett, Assistant to the State Health Officer, for his friendly cooperation in the management of the laboratory.

Respectfully submitted,

(Signed) H. R. MILLS,

Bacteriologist.

STATEMENT OF SPECIMENS EXAMINED

In the Tampa Laboratory During 1916

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Grand Total
Animal Parasites:														
Hookworm:														
Positive ..	8	9	12	7	21	13	16	10	20	9	8	6	139	
Negative .	64	60	62	66	87	61	66	83	86	41	52	56	784	
Unfit	..	1	..	..	..	1	1	..	..	..	..	..	3	
Amoeba:														
Positive ..	1	2	..	..	2	5	..	..	1	1	..	2	14	
Negative .	11	19	12	6	11	..	15	13	4	1	10	6	108	
Ascaris	2	2	7	7	5	8	7	7	6	4	..	5	60	
Oxyuris	1	..	..	..	1	..	..	..	1	..	..	1	4	
Tapeworm	..	2	..	..	1	2	1	..	2	1	..	2	11	
Trichiuris ..	6	4	6	8	3	9	7	10	5	4	4	3	69	
Lamblia Intestinalis	..	..	..	..	..	..	1	..	..	..	..	1	2	1,194
Diphtheria:														
Swabs:														
Positive ..	1	..	1	2	1	..	..	..	..	..	..	1	6	
Negative .	10	6	6	4	4	4	7	2	..	1	1	13	58	
Doubtful .	2	2	1	..	..	..	1	..	1	..	2	1	10	
Cultures:														
Positive ..	59	17	7	12	7	2	2	4	12	5	20	18	165	
Negative .	201	83	71	67	61	31	37	56	41	48	71	64	831	
Doubtful ..	2	3	..	2	3	1	..	2	1	11	5	3	33	1,103
Gonorrhoea:														
Positive ..	9	11	23	15	18	11	13	12	21	14	11	12	170	
Negative .	25	39	46	32	28	28	27	25	23	43	34	29	379	
Doubtful ..	..	..	..	..	1	2	..	..	7	4	1	1	16	565
Malaria:														
Positive ..	..	4	5	2	4	2	6	4	4	8	6	9	54	
Negative .	123	121	114	132	172	148	161	168	173	141	89	94	1,636	
Unsatisfactory	2	2	1	2	1	3	1	3	2	2	3	3	25	1,715

STATEMENT OF SPECIMENS EXAMINED

In the Tampa Laboratory During 1916—Continued

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Grand Total
Pathological Specimens:														
Malignant	9	1	7	2	2	..	2	4	1	3	..	2	33	
Non-malignant	7	2	5	4	4	3	15	6	3	1	3	6	59	
Unsatisfactory	..	..	..	..	..	..	..	..	..	2	..	..	2	94
Rabies:														
Dog:														
Positive ..	..	..	..	..	..	..	..	..	1	..	..	..	1	
Cat:														
Negative .	..	..	..	..	..	..	1	..	..	..	..	..	1	
Cow:														
Negative .	1	..	..	..	..	..	..	..	..	..	..	..	1	3
Tuberculosis:														
Positive ..	8	22	9	12	13	15	8	14	27	6	7	14	155	
Negative .	109	66	89	88	72	74	59	73	46	59	43	28	806	
Doubtful ..	1	..	..	1	1	1	..	..	..	..	..	..	4	965
Typhoid:														
Positive ..	17	12	14	14	9	16	21	13	5	7	9	10	147	
Negative .	76	79	91	91	117	113	110	114	117	79	83	61	1,131	
Incomplete	5	5	5	12	6	9	11	7	2	3	7	13	85	1,363
Para-typhoid .	..	28	..	6	12	7	16	3	5	4	5	20	106	106
Urinalysis	18	3	3	4	..	..	2	8	4	3	6	..	51	51
Water (for Sewage Contamination):														
Positive ..	..	3	1	3	2	5	4	11	1	3	2	..	35	
Negative .	2	19	12	4	2	5	5	9	3	1	2	..	64	
Doubtful ..	..	..	..	..	..	..	..	1	1	..	..	..	2	
Chemical Analysis ..	..	..	..	..	2	..	..	..	..	..	..	..	2	103

STATEMENT OF SPECIMENS EXAMINED
In the Tampa Laboratory During 1916—Continued

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Grand Total
Wassermann:														
Positive ..	..	5	14	21	30	28	17	21	16	7	19	21	199	
Negative .	..	4	55	64	72	66	48	66	78	70	75	49	647	
Doubtful ..	..	..	1	..	..	1	3	1	3	3	2	5	19	
Anti-complementary	..	..	2	..	..	..	..	5	5	2	..	2	16	881
Miscellaneous:														
Actinomycosis	2	..	..	..	..	1	..	..	..	..	..	..	3	
Animal Inoculation	..	..	..	..	..	1	2	..	4	1	1	1	10	
Arthritic Fluid	..	..	..	..	..	..	..	1	..	..	..	..	1	
Ascetic Fluid	..	..	..	..	2	..	..	..	..	..	..	..	2	
Blood Count:														
Differential	9	6	..	..	..	..	6	..	..	1	..	..	22	
Plain	3	6	..	..	..	..	5	..	..	3	..	..	17	
Filaria	..	..	..	..	..	..	1	..	..	..	..	..	1	
Leprosy:														
Positive ..	..	..	..	..	1	..	..	1	..	..	..	..	2	
Negative .	1	..	..	..	..	..	1	1	..	..	..	..	3	
Ophthalmia:														
Positive ..	..	..	..	..	..	..	..	..	1	..	..	1	2	
Negative .	5	5	1	1	2	..	5	2	..	..	..	1	22	
Spinal Fluid ..	..	..	..	..	..	..	..	..	..	..	4	1	5	
Spirochaeta Pallida ...	1	1	1	1	1	..	..	1	..	..	..	1	7	
Unclassified ..	19	12	6	4	9	1	12	21	32	24	25	42	207	304
	820	666	690	696	790	677	723	782	765	620	610	608	8,447	8,447

REPORT OF DR. F. A. BRINK,

Bacteriologist, Pensacola Laboratory

PENSACOLA, FLA., December 31, 1916.

Dr. Jos. Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of Bureau of Communicable Diseases.)

DEAR DOCTOR:

I hand you herewith, a tabulated summary of the specimens examined in this laboratory during 1916. The grand total of 3,310 specimens is smaller than the totals of the two previous years, and at first glance this would seem to show a falling off of the patronage of this laboratory. However, it is noteworthy that if the rat examinations be deducted from the 1914 total, and the excessive number of diphtheria cultures from the 1915 total, then the total for last year would exceed either of the other two by about two hundred. By excessive diphtheria cultures I mean those that were occasioned by an epidemic and school survey in a West Florida town.

The chief aim in the conduct of the laboratory has been to make careful examinations of specimens and get the reports to the physicians as promptly as possible, and in these respects the year's work has seemingly been satisfactory. Whenever the number of specimens has been small, more time and diligence has been expended on each specimen than would otherwise be possible.

The centralization of the Wassermann and pathological specimens has undoubtedly worked an improvement, so far as this laboratory is concerned, for the reason that they are things that require a great deal of attention, and the other specimens came in as usual, so that they or the Wassermanns, etc., had to be neglected.

Yours respectfully,
(Signed) F. A. BRINK,
Bacteriologist.

STATEMENT OF SPECIMENS EXAMINED

In the Pensacola Laboratory During 1916

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Grand Total
Animal Parasites:														
Hookworm:														
Positive	9	9	8	5	15	11	6	12	5	4	6	12	102	
Negative	28	16	8	14	19	15	18	22	17	16	16	21	210	
Unfit	..	1	..	..	..	..	..	..	..	..	..	..	1	
Ameba Coli:														
Positive	..	1	..	..	1	..	6	..	..	..	2	..	10	
Negative	..	..	..	..	2	1	1	2	..	..	1	1	8	
Ameba Buccalis:														
Positive	..	..	..	..	..	..	..	3	..	1	..	..	4	
Negative	..	..	..	..	..	..	..	1	..	1	..	..	2	
Ascaris Lumbricoides	1	..	..	..	..	..	..	..	..	..	..	..	1	
Oxyuris Vermicularis	..	..	..	..	..	..	..	..	..	..	..	1	1	
Tapeworm	..	..	..	..	..	..	3	..	..	..	1	..	4	
Trichocephalus Dispar	5	..	1	..	..	1	1	2	..	..	1	1	12	355
Diphtheria:														
Swabs:														
Positive	..	..	..	..	..	..	..	..	..	2	2	1	5	
Negative	10	3	5	1	9	4	8	7	10	15	27	6	105	
Doubtful	..	..	..	..	..	..	..	..	..	2	..	..	2	
Cultures:														
Positive	..	..	..	..	..	..	1	..	1	12	29	6	49	
Negative	10	3	5	1	10	4	7	7	10	20	63	19	159	320
Gonorrhoea:														
Positive	13	17	28	15	13	10	9	18	23	15	21	31	213	
Negative	27	42	37	66	30	29	19	51	40	19	33	70	463	
Doubtful	..	2	..	..	..	..	..	..	..	..	1	..	3	679

STATEMENT OF SPECIMENS EXAMINED

In the Pensacola Laboratory During 1916—Continued

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Grand Total
Malaria:														
Positive	..	..	1	..	1	1	2	3	7	10	5	2	32	
Negative	45	38	24	29	33	32	36	55	49	52	25	27	445	
Unsatisfactory	..	..	..	..	..	..	..	..	1	..	..	1	2	479
Pathological:														
Malignant	..	2	..	..	..	..	2	..	..	..	..	..	4	
Non-malignant	2	1	1	3	3	3	2	3	..	..	..	..	18	
Unfit for Ex.	..	..	..	..	1	..	..	..	..	..	..	..	1	23
Rabies:														
Dog:														
Positive	..	..	..	..	..	..	..	..	..	..	..	1	1	
Negative	..	1	..	..	..	..	..	..	..	..	..	1	2	
Cat:														
Negative	..	..	..	..	..	1	..	..	..	..	..	..	1	
Squirrel:														
Negative	..	..	..	..	..	..	..	..	..	1	..	..	1	5
Tuberculosis:														
Positive	9	7	9	12	9	1	8	4	6	11	8	6	100	
Negative	78	47	37	34	37	28	18	21	27	12	23	28	390	490
Typhoid:														
Positive	3	7	7	11	6	5	4	11	9	10	4	2	79	
Negative	25	31	49	27	37	31	39	52	66	54	33	23	467	
Incomplete	2	2	2	2	1	..	..	..	3	4	..	..	16	562
Water (Sewage Contamination):														
Positive	1	1	..	..	..	1	..	2	..	2	..	..	7	
Negative	..	4	..	..	..	2	1	4	..	3	..	..	14	21
Animal Inoculations	..	..	..	..	1	1	..	..	..	..	1	..	3	3

STATEMENT OF SPECIMENS EXAMINED

In the Pensacola Laboratory During 1916—Continued

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Grand Total
Blood Counts:														
Differential	11	2	..	..	..	..	..	3	6	1	5	1	29	69
Plain	16	8	1	..	..	..	1	..	1	3	10	..	40	
Wassermann:														
Positive ..	..	2	..	5	2	5	1	4	..	..	..	..	19	81
Negative .	..	1	12	14	9	11	9	6	..	..	..	..	62	
Urinalysis	3	4	2	2	..	..	1	..	2	5	3	5	27	27
Milk Exam. ..	25	17	16	25	13	7	14	32	1	10	2	2	164	164
Miscellaneous	2	7	8	3	2	..	3	2	2	2	..	1	32	32
	325	276	261	269	254	214	220	327	286	287	322	269	3,310	3,310

REPORT OF DR. IVA C. YOUMANS,

Bacteriologist, Miami Laboratory

MIAMI, FLA., January 15, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of Bureau of Communicable Diseases.)

DEAR DOCTOR PORTER:

Herewith is submitted a tabulated report of the work done in the Miami Laboratory for the year 1916. The increase of specimens over those examined during the twelve months preceding is two hundred and fifty-two. The number of milk examinations made is seventy-four less than for the year before. There is a decided increase in the total number of hookworm examinations made. However, in the case of hookworms as also of diphtheria, typhoid, and tuberculosis, the proportion of positive findings was notably decreased. A number of blood smears were examined for cytodiagnosis because of aid thus rendered in detection of hookworm disease; the eosinophiles of the blood being often greatly increased in this condition even when the ova of parasites are difficult to find in the stools. The laboratory continues to make a relatively large number of water examinations. Often such specimens are not submitted through health authorities as prescribed by the Board, but when the work of the laboratory allows of such examinations, it has been deemed wise to make them, especially because of the fact, that many of the suburban and outlying water supplies have been found to be contaminated. A new feature of the work for this laboratory has been the examination of pathological tissues, beginning in August. At that time the equipment from the Central Laboratory was sent to us and we have since taken care of the greater part of the work of this character for the State.

The action of the State Board of Health in placing the Wassermann test for syphilis among the examinations made by the laboratories has met with ready response by the patrons of this laboratory, even though such tests were made here only during the duller season of the year. I feel constrained to say that the Board in taking this action has made a step which may go far toward bringing about other measures which may have great weight in fighting in this State one of the greatest evils that menaces the health of the present and future generations.

During the Fall months our work here was much hampered because of building operations which closed in the windows of our laboratory room, thus depriving us of our main source of light and air. At the request of Mr. Burdine, removal of the laboratory to other quarters was delayed until a light and air shaft could be installed and tested. This addition is now completed and while the room is not well fitted for laboratory purposes, still with some inconvenience the work can be carried on in a satisfactory manner. The fact that provision is to be made for the laboratory in the Municipal Building, soon to be enlarged, makes it advisable to retain these rooms until such quarters are provided.

The frequent demand upon the time of the one in charge of the laboratory to answer various inquiries, and to meet the various exigencies which necessarily arise in a position of this kind makes it necessary to have dependable assistance in order that the work of the laboratory may run smoothly. Recent action on the part of the City Board of Health in helping to meet the salary of such an assistant has enabled me to secure such help as will insure better service in handling the State work, and will also admit of continued service to the city in handling its milk work and this without increased cost to the State.

The City Board of Health of Miami has been very helpful through its cooperation in the work done here. We wish to thank those in the Central Laboratory who have so promptly responded to the calls made upon them. And to the State Health Officer, we are grateful for his encouragement and counsel during the past year.

Respectfully submitted,

IVA C. YOUMANS,
Bacteriologist.

STATEMENT OF SPECIMENS EXAMINED
In the Miami Laboratory During 1916

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Grand Total
Animal Parasites:														
Hookworm:														
Positive ..	1	2	2	..	..	1	1	3	1	1	..	1	13	
Negative .	13	14	8	7	7	5	7	9	8	7	17	3	105	
Tapeworm ..	..	..	1	..	..	..	..	..	..	..	..	..	1	
Amoeba	..	..	..	..	..	..	..	..	..	..	..	1	1	
Trichiuris ..	2	1	1	..	..	..	..	2	..	..	..	..	6	
Oxyuris	..	..	..	..	1	1	..	..	..	..	..	..	2	128
Diphtheria:														
Swabs:														
Positive ..	..	1	..	1	1	1	..	..	3	2	..	..	9	
Negative .	21	3	12	3	1	1	1	2	5	9	11	3	72	
Cultures:														
Positive ..	2	1	..	1	1	1	..	..	3	6	2	..	17	
Negative .	24	4	13	3	..	1	1	2	5	31	26	8	119	216
Gonorrhoea:														
Positive ..	2	3	2	3	3	3	3	8	2	6	2	3	40	
Negative .	5	4	9	11	3	8	11	7	10	5	11	7	91	131
Malaria:														
Positive ..	..	..	..	..	..	..	5	1	2	1	..	1	10	
Negative .	21	10	20	13	14	20	18	23	20	17	30	12	218	228
Pathological ..	..	..	..	1	..	..	..	3	19	17	8	12	60	60
Tuberculosis:														
Positive ..	1	6	4	3	1	2	3	2	4	4	4	5	39	
Negative .	18	19	16	19	15	11	12	10	14	20	12	33	199	238
Widal:														
Positive ..	1	1	4	3	1	5	5	3	2	2	2	2	31	
Negative .	18	8	20	16	14	18	15	16	22	10	15	5	177	
Inc.	1	..	..	2	..	..	7	1	2	4	2	..	19	277

STATEMENT OF SPECIMENS EXAMINED
In the Miami Laboratory During 1916—Continued

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Grand Total
Water contamination:														
Positive ..	55	13	9	13	4	7	7	6	3	2	3	4	126	350
Negative .	30	42	27	17	12	12	15	18	12	16	13	10	224	
Wassermann:														
Positive ..	..	..	7	..	3	5	3	1	..	..	..	..	19	74
Negative .	..	2	11	6	5	8	9	14	..	..	..	..	55	
Milk	37	40	52	78	79	87	70	57	64	45	46	34	689	689
Urine	8	5	1	3	4	2	3	2	4	3	6	..	41	
Differential	4	3	2	..	..	5	1	4	2	..	8	..	29	111
Blood Count ..	3	10	8	..	1	15	..	1	3	..	..	..	41	
Unclassified ..	3	14	4	2	3	6	3	6	4	5	2	1	53	
	270	206	233	205	173	225	200	201	214	213	220	145	2,505	2,505

REPORT OF DR. HAROLD H. FOX,
Bacteriologist, Tallahassee Laboratory

TALLAHASSEE, FLA., January 2, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of Bureau of Communicable Diseases.)

DEAR DOCTOR:

I have the honor to present, herewith, a tabulated report of the activities of the Tallahassee Laboratory of the State Board of Health, for the period from September 25, 1916, when I assumed charge of the laboratory, to January 1, 1917.

For purposes of classification, I have submitted the report in two parts.

I. The first shows:
  A. The nature of the specimens examined, together with the monthly and yearly totals of the results of the examinations.
  B. The grand totals for months and year.

II. The second shows:
  Kind and total number of specimens received from each of the various towns, together with the total number of positive reports for each town.

I. When the laboratory was opened in September, press notices were sent to the local papers and letters were mailed to the physicians of Leon, Calhoun, Franklin, Gadsden, Jackson, Jefferson, Liberty, Lafayette, Madison, Taylor and Wakulla Counties, announcing the resumption of work on the part of the laboratory and enclosing a printed slip showing the specimen containers furnished and examinations made free of charge. The physicians were respectfully urged to avail themselves of the facilities for diagnosis offered by the laboratory. The response was prompt, as over two hundred specimens were received for examination within the first month, following the receipt of the letters. We have very recently sent out to each of the physicians of our district a package of assorted specimen containers, and we are pleased to report that such action has resulted in our receiving specimens for examination from doctors from whom we had not previously heard.

Most of the physicians appreciate the value of a laboratory diagnosis, in their difficult cases, and it has been possible in several instances by microscopic examination to demonstrate that the disease from which the patient suffered was other than that for which he was receiving treatment. For example: Two cases of typhoid were being treated as aestivo-autumnal malaria; in another instance a case of hookworm was regarded as appendicitis. Correct laboratory diagnoses of these cases and others of like nature have probably saved the attending physician considerable embarrassment, if not the loss of his patient.

During the latter part of Novembeer an outbreak of diphtheria occurred at Monticello which soon assumed epidemic proportions. Cultures were submitted to this laboratory for examination and the reports when positive, were telegraphed to Dr. Brinson, the City Physician of Monticello. The cases were of a mild type, however, and by energetic and efficient action on the part of Dr. Brinson in securing swabs from all of the school children and relying on positive reports from the laboratory to isolate his active and carrier cases, it did not become necessary to close the schools and the epidemic was promptly cleared up. It is hoped that by making frequent examinations of the cases which prove to be carriers and by eliminating by treatment such cases as prove positive, that in the future in Monticello, diphtheria will not assume the proportions which it has for the past few years.

It has been the practice of the laboratory to report, in so far as possible by telephone or in person, specimens examined and in addition in all cases a typewritten report of the examination has been mailed the physician or other party supplying the specimens. I have been assured by many of the doctors that they value the written reports for filing with the case record, especially since in the examination of malaria specimens, whenever the opportunity afforded, a differential blood count has been included in the laboratory report.

In addition to mailing reports to the physicians, reports of positive typhoid and diphtheria cases have been mailed to Dr. Brevard, Assistant to the State Health Officer, for this district, and the positive tubercular cases are reported to Mrs. Kirk, the District Nurse, of the State Board of Health, thus enabling them to keep in touch with such cases of these diseases occurring in their districts. Many specimens of sputum have been sent in by the District Nurse for examination, several of which have proven positive.

All cases of diphtheria occurring within the city have, at his request, been reported by mail to Dr. Ausley, City Physician.

A considerable number of samples of milk have been examined, also at the request of the City Physician. Although the examination of milk does not properly come within the scope of the State Board of Health, it has been a pleasure as time afforded, to examine the specimens submitted, and it has been possible as a result of the examinations to offer several suggestions which have enabled the dairymen to supply their customers with a more uniform, and it is hoped, more cleanly milk.

Considerable interest has been displayed in this branch of the laboratory work, and on several occasions the dairymen or their customers, have called in person at the laboratory for the purpose of clearing up points in regard to their dairy or milk supply. It is hoped that this work will be continued by the City Physician and that ultimately such a system of grading the dairies as is advocated by the United States Department of Agriculture will be adopted. I feel confident that once the dairymen realize that such a proceeding would react to their benefit as well as to that of their customers, they would give the measure their unqualified support.

A considerable number of circulars of information issued for free distribution by the State Board of Health, have been given out by this laboratory and I am pleased to report that we have also been able to furnish the Florida State College for Women, at Tallahassee, with cultures of both diphtheria and typhoid organisms, for which they have asked, for use in their class work.

A tentative plan for the giving of illustrated lectures on Bacteriology and Public Health Topics, to the students of the Florida State College for Women has been outlined and submitted to the President of the College, and should it meet with his approval, I shall arrange to give lectures on the above topics, to the students and possibly to the public, either in the evening or at such other time as will be mutually most convenient. With the stereopticon libraries of the State Board of Health and of the United States Public Health Service to draw from, such a series of lectures should have considerable educational value.

I propose, also, during the coming year as spare time affords at this laboratory, to give short easily understood talks on Hygiene and Sanitation, to the pupils of the District Schools.

The laboratory has been in operation but such a short time —a little over three months, that but little data is at hand for basing an opinion on the amount of work which it will in time be called upon to perform, and too, the laboratory has been closed for so many months that many of the doctors have fallen into the habit of sending their specimens elsewhere. We represent, however, a district with a population of one hundred and fifty thousand, so that in time by the methods I have outlined above, Stereopticon Lectures, Rural School Talks, personal calls on the physicians, etc., I hope to develop this laboratory to its maximum capacity.

In conclusion I wish to express my appreciation of the ever ready sympathetic response, which has been ever accorded my request, by the State Health Officer, and of the pleasure and instruction which has been afforded me by my association with the members of the State Board of Health of Florida.

Respectfully yours,
(Signed) HAROLD H. FOX,
Bacteriologist.

STATEMENT OF SPECIMENS EXAMINED
In the Tallahassee Laboratory During 1916

	1st to 10th Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	From 25th Sept.	Oct.	Nov.	Dec.	Total	Grand Total
Animal Parasites:														
Hookworm:														
Positive ..	..	..	..	..	..	..	..	..	..	6	4	3	13	
Negative .	..	..	..	..	..	..	..	..	..	9	8	8	25	
Ascaris	..	..	..	..	..	..	..	..	..	..	..	1	1	39
Diphtheria:														
Positive ..	4	..	..	..	..	..	..	..	4	7	63	4	82	
Negative .	34	..	..	..	..	..	..	..	1	39	375	12	461	543
Gonorrhoea:														
Positive ..	1	..	..	..	..	..	..	..	1	2	2	2	8	
Negative .	..	..	..	..	..	..	..	..	1	3	4	4	12	20
Malaria:														
Positive ..	..	..	..	..	..	..	..	..	..	8	3	4	15	
Negative .	9	..	..	..	..	..	..	..	5	48	37	18	117	132
Tuberculosis:														
Positive ..	3	..	..	..	..	..	..	..	..	4	2	2	11	
Negative .	5	..	..	..	..	..	..	..	2	12	7	10	26	47
Typhoid:														
Positive ..	2	..	..	..	..	..	..	..	..	2	1	1	6	
Negative .	4	..	..	..	..	..	..	..	6	32	13	8	63	
Incomplete	..	..	..	..	..	..	..	..	..	4	3	2	9	78
Milk Examination	..	..	..	..	..	..	..	..	..	32	15	21	68	68
Urinalysis	5	..	..	..	..	..	..	..	..	2	2	3	12	12
Blood Count:														
Differential	1	..	..	..	..	..	..	..	1	4	3	4	13	13
Kock-Weeks ..	..	..	..	..	..	..	..	..	1	..	..	..	1	1

STATEMENT OF SPECIMENS EXAMINED

In the Tallahassee Laboratory During 1916—Continued

	1st to 10th Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	From 25th Sept.	Oct.	Nov.	Dec.	Total	Grand Total
Pus Examination	:	:	:	:	:	:	:	:	1	2	:	:	3	3
Ophthalmia: Positive ..	:	:	:	:	:	:	:	:	:	1	:	:	1	1
Tick Fever: Negative .	:	:	:	:	:	:	:	:	:	:	:	1	1	1
Rabies: Dog: Positive ..	:	:	:	:	:	:	:	:	:	:	:	1	1	1
	68	:	:	:	:	:	:	:	23	217	542	109	959	959

REPORTS OF DISTRICT PUBLIC HEALTH NURSES

PENSACOLA, FLA., January 1, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of Bureau of Communicable Diseases.)

DEAR DOCTOR:

Herewith is my report for the year 1916:

Total number patients under instruction January 1, 1916	104
New cases found	135
Cases found to have died	92
Cases removed	33
Transferred to other districts	43
Cases apparently cured	7
Total number patients under instruction December 31, 1916	64
Inspection visits made in Pensacola during August and September account of poliomyelitis epidemic in the Northern States	308

Trusting this meets with your approval, I am,

Very respectfully,
EULA LEE PASCHALL,
District Public Health Nurse.

TAMPA, FLA., January 1, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of Bureau of Communicable Diseases.)

DEAR DOCTOR:

Enclosed you will find a summary of the year's work which I hope is what you wish.

I have nearly completed the survey of West Tampa. Have located about thirty new cases of tuberculosis. Find the sanitary conditions of West Tampa very bad indeed, mostly due to poorly managed bucket systems and the keeping and stabling of cows in thickly populated parts of town.

There follows a synopsis of anti-tuberculosis activities in my district during the past year:

Number of cases of tuberculosis at beginning of year	148
Number of new cases found during year	196
Cases found to have died	58
Transferred to other districts	80
Cases removed	71
Cases cured	7
Cases under instruction December 31, 1916	128

Twenty health talks made to schools, clubs etc.

Council and mayor of Lakeland interviewed in regard to local tuberculosis situation.

Preparations made for organization of colored anti-tuberculosis society in Tampa.

Tuberculosis survey begun in West Tampa and Ybor City.

For the probable improvement of the efficiency of the district nursing service, I respectfully submit the following recommendations:

Supervision for nurses, either for district or State, in order that work may be uniform. A supervisor who regularly goes over district and understands all about the district. as few of them are alike in needs, possibilities, etc. This person to be one who can assist in talks to be made in district or any other special work that may arise. A person capable of instructing nurses in district, providing such necessity.

A desk at the State Board of Health Building in Tampa.

Supplies such as sputum cups, paper napkins, disinfectants, etc., to be supplied indigent patients.

Allowance made, if only a limited amount, for automobile hire as there are patients in secluded districts who have no physician, and it is impossible to get horse, and even if it is obtainable it is not safe for a woman to go alone to drive such a distance.

Respectfully submitted,
HARRIET J. SHERMAN,
District Public Health Nurse.

GAINESVILLE, FLA., January 1, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of Bureau of Communicable
Diseases.)

DEAR DOCTOR:

In reporting visiting nursing in central district for the year 1916, but three months of actual work can be included.

From January 1st to August 1st, I was on leave of absence owing to the illness and death of my mother.

The first half of November was spent in special detail work outside my territory; while from the middle of November to date, our regular visiting work has been at a comparative standstill.

Thus my report summarizes the work of but three months—August, September and October.

From August 1st to the 22nd I made a trip over Alachua County, and spent four days on cases of malaria in Cedar Key, Levy County.

On August 23rd, I went to Leesburg, meeting there Miss Jessie Wheeler, Public Health Nurse from Sanford. We spent one week visiting the towns of Lake and Sumter Counties. I was able to introduce her to all the physicians, but only a few patients.

From August 27th to September 2nd, I made a similar trip over Hernando and Pasco Counties with Miss Sherman of Tampa. We met the doctors here but not many of the patients. Miss Sherman is very familiar with all this territory, having covered much of it before. The opportunity of meeting and working with these two nurses was a great help to me.

The month of September was spent with physicians and patients in Marion and Citrus Counties. In the latter county I had cooperation, and was able to call on every community. We started some very effective clean-up work in schools. Had it not been for my own inability to follow it up, I could make a report now that would be a credit to each town.

In Marion County the Woman's Club labored with me to secure a report from every doctor in the county as to the number and location of his tuberculous cases. You know the result—we had not one response. The women were discouraged, but I was not surprised. The doctors seem unwilling to report cases to a nurse.

I spent one week of October in the Ocala Hospital with malaria. Following this I did city school work in Gainesville and Ocala.

The first ten days of November were spent with the Home Economics Agents in South Florida, where talks on Personal Hygiene, Community Sanitation and the Prevention of Communicable Diseases were given in Plant City, Bartow and Kissimmee.

From the middle of November, when our visiting was limited to headquarters and thereabouts, to the present time, I have been giving personal nursing care to tuberculous patients here, at Waldo, Hawthorne and Port Orange. Several cases of pneumonia and typhoid have been referred to me also.

The accompanying report cannot be an accurate statement of the district work at present. There is so much of it I am wholly unable to bear from, except as I go to it. The report is a summing up of the cases I have been carrying on my list, with all the corections I am able to make from my limited visiting.

In spite of the fact that the actual detail work done in my district is pitifully small—and this is true because I have been unable to push it, yet it is just as true, that the work is on a better basis than ever before.

While the people are slow to learn the uses of a Public Health Nurse, they are very willing. While the doctors are often negligent in reporting, they will most surely call us when in need. After once doing work in any of my towns, I have realized that my position was fairly secure with the doctor. In fact, I have had far more calls than it is possible to answer, even when we were on regular visiting basis.

I mention this condition, feeling sure that in a very short time the greater part of our work can be done on call; which will save in two ways, i. e., the energy of the nurse as well as her expense account.

Total number patients under instruction January 1st, 1916	92
New cases found	72
Cases found to have died	42
Cases removed	46
Cases transferred to other districts	15
Cases apparently cured	9
Total number patients under instruction December 31, 1916	52

Thanking you always for the perfect support of the Executive Office, and begging pardon for so rambling a report, I remain,

Very respectfully yours,

MARY H. SPENCER,
District Public Health Nurse.

JACKSONVILLE, FLA., December 30, 1916.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of Bureau of Communicable
Diseases.)

DEAR DOCTOR:

As requested by circular letter of recent date, I am submitting the following summary of my activities for the year 1916 in discharge of my duties as Public Health Nurse for the State Board of Health.

Besides the practical lessons given to actual cases of tuberculosis in my district, I have circulated leaflets and pamphlets throughout the counties in an effort to reach every man, woman and child able to read. How to guard against our common foe, tuberculosis, and teaching laws of sanitation and prevention.

The majority of my patients accept me now as their confidential friend, and treat me as such. I am deeply interested in them and my visits are always welcome. I have tried to make friends with my people, and have to rely upon suggestions and personal influence to bring about the changes most needed in each individual case.

There is prejudice and custom to be overcome in the country. "My mother or father did it like this" often causes opposition to all arguments for open windows, screened houses and sanitary premises.

The results shown, and attitude of the people at large, particularly the majority of physicians, the first twelve months of my work was, to say the least, disheartening, but I am proud and happy to say, a change has taken place, especially so among the doctors. I am no longer treated with indifference, and the work referred to as a joke, but with respect, and as a co-worker, an ally, and not a meddlesome rival.

The town officials, too, have a more friendly attitude toward the work and listen with patience and interest whenever I have occasion to visit them and tell me they are willing and anxious to co-operate with us.

The Woman's Clubs have also been extremely helpful along this line, and are always ready to respond to any assistance I ask of them in using their influence with city officials in getting things done.

The newspapers have also helped along educational lines by giving publicity to our work, and what we are doing, and what we are trying to do.

This great problem is one of patience and love, tact, and broadmindedness, as well as a practical knowledge of human nature. Yet in spite of all the inconveniences, drawbacks, heartaches, disappointments we encounter, there is a glory in this pioneer work which makes it well worth while.

Total number of patients to July, 1916	267
Referred to Mrs. Scott, July 1st, 1916	138
Referred by Miss Foote, July 1st, 1916	24
Total number of patients to date	216
Total number of patients to have died	52
Total number of patients moved to other Counties or States	34
Apparently cured	9
Professional visits	1,725
Miscellaneous visits, physicians and others	800
Schools visited, short talks on personal hygiene, health and sanitation in relation to tuberculosis	82

Respectfully,
SUSAN VOORHEES,
District Public Health Nurse.

TALLAHASSEE, FLA., January 1, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of Bureau of Communicable Diseases.)

DEAR DOCTOR:

As instructed, I am submitting my yearly report to you. Below you will find a summary of the work which covers the district before and after the division of the same.

This report only shows a record of tuberculosis work, but as you know, I have made many calls on account of other diseases and also have done considerable school work.

Total number patients under instruction January 1, 1916	119
New cases found	238
Cases found to have died	42
Cases removed	41
Cases transferred to other districts	84
Cases apparently cured	37
Total number patients under instruction December 31, 1916	153

Hoping the report will meet with your approval, I am,
Yours very truly,
LYDIA L. KIRK,
District Public Health Nurse.

DAYTONA, FLA., January 1, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of Bureau of Communicable Diseases.)

DEAR DOCTOR:

According to your request I hereby submit a report of the work of my territory for the year 1916:

From January 1st, 1916 to July 15th, 1916 I had the territory comprising the counties of the east coast, beginning with St. Johns County and including and ending with Monroe County. On July 15th, 1916 I transferred to Mrs. Susan Voorhees all patients in St. Johns County and accompanied her over the territory on her first trip. On November 9th, 1916, I completed the trip over the counties of Palm Beach, Brevard, Dade and Monroe, with Mrs. M. E. Roach, and transferred all patients to her in that district, leaving me, as my present territory, Volusia, Brevard, St. Lucie and western portion of Osceola County.

Some two years ago, before being employed by the State Board of Health, I was instrumental in assisting St. Augustine and St. Johns County in obtaining a permanent public health nurse. Since my employment by the State Board of Health and during the time I had St. Johns County as part of my territory, I had splendid cooperation with the public health nurse of St. Augustine. Although partly supported by the county, her work was practically limited to St. Augustine.

During the period of my visits to St. Johns County several sleeping porches were built, and two physicians, at first antagonistic to the work of the State Board of Health nurses, came to be the most staunch supporters of the movement.

In February 1916, I was detailed to assist the Woman's Club of Melbourne, carry on a Babies Health Conference at Eau Gallie during the Brevard County fair. Although carried on in a small way it was the means of imparting much valuable information to the country people, and in stimulating an interest in the physical welfare of the children. We are already planning for the coming fair to be held in March 1917, and expect to broaden in several ways. The Brevard Medical Society offering unlimited support.

During the spring of 1916, I found the colored population of Ormond and Daytona much in need of more systematic nursing service among their race. There is a colored hospital in connection with the Mary Bethune Industrial School, where girls from the school were being sent out to care for the poorer negroes in their homes. This was not efficient service or systematic. After some discussion and in August 1916, a colored public health nurse was employed by Ormond and Daytona; the money being raised through the city councils and Woman's Clubs, also benevolent individuals and the Mary Bethune Industrial School, of the towns of Daytona and Ormond. After three months in the territory I visited the district with her and find much good has been accomplished by her systematic visits and instructions.

In December 1916, Daytona realized, after much overlapping of charity that it was in need of some organized method of relief giving. After a talk to the Philanthropic Department of the Woman's Club, a very decided action was taken and within the next two months I hope to report that a social worker has been added to the ranks of the Social Welfare workers of Daytona. I also hope to report a Babies' Health Conference early in 1917 for Daytona.

In West Palm Beach I was confronted with the same problem as Dayonta and Ormond: The lack of adequate care for the colored tuberculous patients. As there was a hospital for colored patients already established in West Palm Beach, I suggested to the Woman's Club that they with the city council make provision for the tuberculous patient. This was done and three tent buildings, properly constructed, were put up. They have been constantly in use since that time. About twelve outdoor sleeping porches have been arranged for in the different localities of the territory and many more are sleeping with windows open that never before "heard of such a thing."

In Miami I found the infant death rate very high, of stillborn children delivered by midwives. I had just commenced to take the matter up when the territory was divided.

Key West is hopeless, until politics are removed from the control of all health conditions, in a community way. When a dairy of 26 cows is permitted to exist in the most densely populated part of the island, then nothing but the stern arm of the State law will ever reach them.

I have talked before almost every Woman's Club, on general hygiene, (dividing it into personal and public hygiene) and covered the entire district before it was divided.

I have asked the assistance of the Club Women in the matter of stimulating city councils in passing health ordinances, particularly screening of outhouses and stores. I find them the "power behind the throne," in very many instances are laws passed not from a sense of duty always, but rather to lessen the continued agitation of the Club women. In this way I work in close cooperation with the Assistant State Health Officer in the district.

Although the work was primarily for the advice and instruction of tuberculous patients, I have never been able to refrain from trying to improve conditions that came to my attention. I am very much pleased that the work has been extended and feel that much better and more results can be obtained in the coming year.

My recommendations would be:

First, some method of dealing with the sanitary, or I may say, insanitary, conditions now existing in most camps; of lumber camps or packing houses, or any place harboring a community of people for permanent employment. It seems almost hopeless to try to eliminate disease when the source is continually supplying more disease. Many corporations, or people employed by them do not seem to be able to see beyond a dollar sign, and I am sure nothing but stringent laws will cause any improvement. I have personally found out they have no sense of right or wrong, no civic pride, no thought of "the other man." There seems to be absolutely nothing to appeal to in them, except dollars and cents, and the law to enforce them to make improvements.

Another suggestion, although old, but still one I feel we would all profit by is a meeting together of the Public Health workers and the heads of the departments. Even meeting the few workers in the adjoining territories I am sure we each gain a great deal, and we are able to work in a more uniform way, and gain by the progress of each new idea.

I find medical inspection of schools to be much desired by the communities, and any further appropriations and assistance, will be greatly appreciated by all intelligent people.

'Since eliminating the use of automobiles, I cannot refrain from saying that automobiles for the individual workers will be the only way we can carry on the visits in a satisfactory way to any of the rural cases or country schools. As it is now, we will only be able to reach the larger communities and visit the few patients living in town.

Most respectfully submitted,

IRENE R. FOOTE,
District Public Health Nurse.

MIAMI, FLA., January 1, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of Bureau of Communicable Diseases.)

DEAR DOCTOR PORTER:

As my appointment as District Public Health Nurse was from July 15th, 1916, my report covers only that period of the past year.

Enclosed, please find summary of cases handled in my district during the months that I have been in charge.

From July 15th to September 30th, 1916, I was detailed at the Union Station of Jacksonville to assist the Assistant State Health Officers in the inspection of child travel.

I left Jacksonville, October the 2nd, arriving in Miami October the 3rd, where I was met by Miss Foote and was accompanied over the territory to which I had been assigned. Our first visit was to Key West, where we found a dairy consisting of about twenty-six cows in the center of the thickly populated portion of the city.

In Tropico, the sanitary conditions were very bad.

In West Palm Beach, death reports were not being sent in.

Lake Worth, privy in center of town, doors and vault open and not screened. Also people here claim sewage from West Palm Beach is left on the beach at Lake Worth at low tide.

Dr. Lowery of Ft. Lauderdale reported a case of diphtheria in school at Hallendale. Under the supervision of Dr. Joseph Y. Porter, Jr., I took swabs from throats of forty-seven children, five of which were positive. About seventy per cent of these children had enlarged tonsils and possibly adenoids and about the same per centage suffering from hookworm.

In Dania, toilet opposite hotel not screened, doors and vault open. These troubles may have been corrected since as I have only covered this territory once, owing to the fact that on November the 7th, I received instructions to remain in headquarters the balance of the current year.

I have spent the time in headquarters trying to get the people of Miami interested in Public Health work.

I find the per centage of stillbirths high, and the majority of these were delivered by midwives. Dr. Peters, the City Health Officer, sent out notices to the midwives and on the 29th of November, I lectured to them. Dr. Peters has taken this matter up with the City Board of Health and they instructed him to draw an ordinance, which will be presented to the City Council.

The City Health Officer and the practicing physicians of this city have cooperated in the State Board of Health work in every way.

December the 3rd to the 10th, we celebrated "Tuberculosis Week" with talks to the public and school children, both white and colored. On Wednesday, December the 6th, free medical examination of applicants. As a result, my cases in Miami, which, on first of November numbered twenty-six, now numbered sixty-seven.

Total number patients	149
New cases found	103
Cases found to have died	34
Cases removed	18
Cases apparently cured	10
Total number patients in District under instruction December 31, 1916	190

I assisted the chairman of the Woman's Club in placing $160.00 worth of Red Cross stamps and I sold 1,100.

Respectfully submitted,
(Signed) MARY ELEANOR ROACH,
District Health Nurse,
District No. 12.

LAKE CITY, FLA., January 1st, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of Bureau of Communicable Diseases.)

DEAR SIR:

Herewith is submitted as briefly and concisely as possible a report of my work as District Public Health Nurse for the State Board of Health, from August 1st, 1916 to January 1st, 1917.

During this entire time a campaign of education has been waged, and no opportunity lost to spread the gospel of good health.

The first two weeks in August, accompanied by Mrs. Voorhees, the former nurse in this district, I surveyed Columbia, Hamilton and Suwannee Counties, visiting all the towns, physicians and patients we possibly could in each county.

Being fairly familiar with Bradford and Baker Counties, I surveyed them alone during the latter half of the month. Since that time I have visited all the towns in my district once, some twice, and others three times, doing everything helpful I could along health lines upon each visit.

I have interviewed city officials, Superintendents of Public Instruction, principals of schools and others, always endeavoring to get them more deeply interested in better health and sanitary conditions; have also talked to school children, women's organizations of various kinds; put up health posters in the schools, postoffices, depots and country stores; maintained an exhibit at two county fairs for five days each—meeting many people, talking health matters to them; finding several new cases of tuberculosis; and distributing thousands of pages of literature. I tried earnestly to get all the leading ministers and teachers in my district to join in the nation-wide observance of Tuberculosis Week in December, sending them plans and literature for same; also endeavored to have Red Cross seals sold in all towns and villages.

I have visited all the tuberculous patients possible, advised and instructed them how to live for their own good, and for the protection and welfare of those around them.

Many mothers with young children have been visited, talked with and advised as to general care, diet and so forth, especially in the summer months when so many babies were sick.

Typhoid fever, and all other communicable diseases found, have been visited and instructions given for prevention of spread of infection.

In each of the five counties some of the newspapers are very helpful by giving publicity and kindly comment to the work. Some physicians in each county are interested, report cases to me, and cooperate in practical ways, while others are extremely indifferent and unconcerned. While there are many hardships and discouragements in this work, I find that as people understand what we are trying to do, and that our only object is to help them, they more fully appreciate our services.

I find people everywhere need waking up and educating to the importance of fresh air, screens, and proper food to keep the body built up and strong to give it power to resist disease germs. I am more deeply impressed every day with the great need for this work of education for prevention of disease, and what it means to the people of the State.

Number of patients referred by Mrs. Voorhees	138
Number of new patients found	56
Number of patients who have died	20
Number of patients moved to other Counties or States	16
Number of patients apparently cured	5
Number of patients at present	153
Pages of literature distributed	62,000
Visits made to patients	467
Visits to physicians and others	122
Letters written in interest of work	89

Very respectfully,
MRS. F. A. SCOTT,
District Public Health Nurse.

MARIANNA, FLA., January 1st, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of Bureau of Communicable Diseases.)

DEAR DOCTOR:

Herewith please find my annual report. You will remember I came here in October, 1916, and was over my territory only once when our travelling stopped. I have been in my headquarters since, and as I have no tuberculosis patients here I only have report for October.

Total number patients under instruction October, 1916	43
New cases found	9
Cases found to have died	4
Total number cases in District December 31, 1916	48
Total number patients following instruction	25

Trusting it is made out correctly, I am,

Yours very truly,
MARGARET L. BENNETT,
District Public Health Nurse.

LAKELAND, FLA., January 1, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of Bureau of Communicable Diseases.)

DEAR DOCTOR:

Please find enclosed a general report of my work since July 1, 1916, at which time I entered upon my duties as District Nurse for the State Board of Health.

During the month of July, I surveyed my entire district, Polk, DeSoto, Lee and Osceola Counties, in company with the former nurse, Miss Sherman. Since that time I have visited all the towns in this district at least three times, and some, more. Making regular calls upon the former patients, of whom there were 66, and locating and fully instructing 94 new cases of tuberculosis. Reporting at this time a total of 107 cases.

I find 74 patients following instructions so far as lies within their power. Some of the others are doubtful, some are rather indifferent, but I have found not one, actually obstinate. And while these conditions are difficult to deal with, the general attitude of the patients and their families toward us is promising at least.

Have visited several cases of typhoid fever and pellagra among the poorer classes and given the necessary instructions for prevention and all other aid possible.

During the five months, I have found a number of families in actual need and I, of course, made special effort to, and obtained charitable aid for these families.

When requested, I have made talks to the clubs, schools, etc., on various Public Health topics, laying special stress during the last month on tuberculosis, with the object of furthering the sale, as far as possible of the red cross seals. I also disposed of one thousand of these seals in behalf of the Florida Association.

Thanking you for your interest and ever ready assistance in my work during the past and trusting to merit it in the future, I am

Very truly yours,
RHEA H. LEE,
District Public Health Nurse.

SANFORD, FLA., January 1, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of Bureau of Communicable Diseases.)

DEAR DOCTOR:

Pursuant to your instructions, I submit herewith a report of my work during 1916, and call attention to certain matters that will help the State in our work.

I find that many of the physicians do not help as much as they could do, by getting names and addresses of cases of tuberculosis among the colored people. They say the negroes come to see them maybe once or twice, and then they do not see them again, and that they don't feel like bothering with them any way, etc. I told one doctor, that I knew it was discouraging, not to have them take treatment, and not any money treating most of them, but that if they would only keep their addresses and names, so I could find them, for it is the negro, and the ignorant white people that we especially wish to locate, so that we can instruct them how to prevent the spread of the disease, also how to care for themselves, but some of the doctors do not take the interest they should, though I have gotten on nicely so far with all of them, but feel they could help me locate more cases if they only would do so.

The latter part of November, and December I have written to most of the doctors in each town where I have patients, sending a stamp or stamped envelope, for reply, asking all about the patient, if any new cases, removals or deaths, and the Lake and Sumter County physicians have nearly all replied, giving me all the information they could, but unfortunately physicians of some other counties have not replied to any of my letters.

Dr. Porter, Lake County teachers think that they would like to use the tuberculosis and typhoid exhibit I have in the schools of Lake County, first in one school until they have studied them, then send to other schools of the county. I believe a great deal of good can be done in this way, and will try to do something in the schools of my other three counties.

Lake County seems to be very wide-awake and anxious and glad to do anything that will help educate the people to the importance of better living, and to the betterment of health of the State, and this county in particular.

The principal of the Orlando grammar school is very interested in all measures for the health of the school children, and I feel sure he can and will use these exhibits in the different grades of his school.

I think if all the schools would get the publications on the communicable diseases, that it would accomplish a great deal of good in educating teachers so that they can detect symptoms of those diseases among the children in school, and call attention to the parents, so they will have them examined, as many parents pay no attention whatever to the cards sent them by medical examiners about the physical defects, and diseased conditions of their children, but if the teachers would impress the parents with the importance of seeing to the welfare of their children's health, especially when the medical examiners send out cards stating the trouble. I think it would cause the parents to think more and I trust to act more than they are doing now about these things.

In reading the last number of Health Notes, I was very much interested in the essay on "Tuberculosis, Its Cause, Prevention and Treatment," by Charlie Frank Scruggs, and think it a good plan indeed, and will try to get such a contest in some of the schools in my district.

It is not a law yet, that all toilets shall be sanitary. I mean *all* even those in country homes, but I truly hope that it will be one soon, for some of the toilets in country homes are a disgrace and there seems to be so much hookworm disease in these sections, though they are very loath to believe that soil pollution causes the spread of this disease. In fact, there is a great deal of ignorance about the disease, also about typhoid, even among persons you naturally would think were informed on such subjects.

A school teacher asked me to explain to her about the way typhoid was transmitted, and in telling her the different ways, I was surprised to find out that she never had known that persons could be "carriers," of the disease unless they were ill of the disease; also about diphtheria, and thanked me for explaining to her how this could be.

I believe that I have mentioned all that will be of special interest, and trust my report will be satisfactory.

Total number patients under instruction July 1, 1916	29
New cases found	126
Cases found to have died	15
Cases removed	12
Cases apparently cured	13
Total number patients under instruction December 31, 1916	115

Very respectfully yours,

JESSIE WHEELER,

District Public Health Nurse.

TAMPA, FLA., January 1, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.
(Through Dr. C. H. Dobbs,
Chief of Bureau of Communicable
Diseases.)

DEAR SIR:

Your letter to hand, requesting that I send in a letter summarizing my work.

In reply wish to state that the sanitary conditions, among the poorer class of colored people in most of the places I visit, are alarming. A number of these people are living in two and three-room houses which, because of the fact that these places have been constructed without any thought of proper openings, would serve better as store rooms than dwelling places. The occupants scarcely able to make a decent living must, on account of cheapness of rent, occupy these places. Many of them have the open earthen toilets almost adjoining the houses. This in itself serving as an aid to sickness. I know of no better place to point out, as an example of this, than Tampa.

Often I come across homes wherein the inmates are not living up to the best sanitary methods and on account of these conditions have to conduct a general clean-up in the homes. On going around to many of the homes for a second time I observe changes toward better sanitary living.

I feel very proud to be able to say that the colored people are very appreciative of all instructions given them. My sick patients, as a rule, are very dutiful and seemingly put forth all efforts to follow my instructions. I also give to them, along with my other instructions, certain physical culture exercises which I think prove to be beneficial.

As a close observer of the schools of this State, I note a great deficiency of sanitary methods and such a little knowledge on the part of the children as to the essentials of sound health. With this fact in view, I realize that one cannot hope for a thorough campaign unless the children are properly instructed, and too, since there are few medical inspectors in the colored schools, I would like, if it is agreeable to you, to ask that I may, together with the cooperation of the superintendents

and principals in the various towns have a particular hour and day set aside during the time that I am in each town, for instructing the children along health lines, and as a result thereof effecting a general awakening among the children.

In some of the smaller towns the Women's Clubs have become interested in my work and as a result have formed health committees enabling them to give more attention to the suffering.

I cannot report to you any difficulties, for I do not consider that I have had any. I enjoy the work greatly and everybody seems to do all within their power toward the success of the same. One could not feel other than encouraged because the work is certainly a great endeavor.

New cases of tuberculosis found during year	176
Cases found to have died	16
Cases removed	8
Cases apparently cured	6
Total number patients in district under instruction to date	146

Please let me hear from you as soon as possible in regard to the visits to the schools.

Very respectfully,
LOTTIE CULP GANTT,
Public Health Nurse.

REPORT OF GEORGE W. SIMONS, JR., B.S., S.B.

CHIEF BUREAU OF ENGINEERING

REPORT OF GEORGE W. SIMONS, JR.

Chief Bureau of Engineering

JACKSONVILLE, FLA., December 31, 1916.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Fla.

Introduction

DEAR DOCTOR:

I have the honor to submit herewith for your consideration the report of the Bureau of Engineering for the period of six months from July 1st to December 31st, 1916.

Detailed Plan of Beginning Work

The activities of this Bureau were commenced on July 1st, when I took charge. At first, attention was largely devoted to the organization of office routine, also towards the acquisition of general information from the State at large on sanitary engineering problems, in order that all future work could be efficiently executed with alacrity and facility. Simultaneously immediate work was started on sanitary surveys in various cities and towns throughout the State and during the six months period above noted, such complete sanitary investigations were conducted in 22 towns. The investigations were all relative to water supplies, sewerage, sewage disposal and general sanitary engineering problems which had presented themselves. Several of these surveys were instituted at the request of citizens residing in the cities and towns, others conducted on our own initiative. In each instance a complete detailed report was submitted to the mayors and councils, offering suggestions and advice deemed necessary as a result of the survey.

Citizens throughout the State are being rapidly informed of the Engineering Department and its functions and as a consequence the amount of office clerical work is increasing markedly, inquiries being received daily concerning the various features of rural and home sanitation as well as inquiries from municipalities for extensive surveys. Such interest manifested by the people of the State is encouraging and acts as a stimulus for greater things during the current year.

On November 15th, the work of the Bureau was augmented by the establishment of a water and sewage laboratory, a valuable adjunct to the Engineering Department. In charge of this work I secured the services of Mr. Arthur F. Shuey, a graduate of the Massachusetts Institute of Technology, a man capable of efficiently operating this important line of endeavor —furthermore a valuable asset to the Bureau as assistant engineer.

I confidently feel after six months of operation, that the Bureau is now equipped and in a position to execute the sanitary engineering problems the people of Florida may propose.

In order to facilitate the presentation of this report and simplify its compilation, I have taken the liberty of dividing same into several component parts, each of which treats in detail of the activities under the specific heading attached.

Respectfully submitted,
GEORGE W. SIMONS, JR.,
Chief, Bureau of Engineering.

INTRODUCTION

The Bureau of Engineering was created for the sole purpose of rendering helpful assistance to cities and towns in solving the sanitary engineering problems confronting them rather than exhibiting a demonstration of authority. Much more can be gained from personal conferences and discussion, and the services of an Engineer, acting in an advisory capacity, are indispensable to the community. The sanitary engineer can suggest and advise for improved sanitary conditions and be of an untold value to the city or town under advisement.

STATUS OF SEWERAGE AND SEWAGE DISPOSAL

General

As stated in the letter of transmittal, one of the first and most significant duties to confront the engineering department was the acquisition of available information relative to the sanitary improvements and construction work already installed within the State previous to the creation of the Bureau. The collection of this preliminary data was essential and necessary to secure general information concerning the exact status of sewerage installations, sewage disposal, and water supply; also have available in concise form a summarized view of present conditions as regards these utilities. Furthermore, such information contributes to our knowledge, concerning the grade and quality of work already performed, the class of workmanship previously employed and the costs of construction.

To make an effective start, a blank question form was prepared and submitted to the mayors of 184 cities and towns exclusive of the five largest cities, Jacksonville, Tampa, Pensacola, Key West and Miami. These blanks had printed thereon several general questions; only such questions as would tend to give the Bureau a reasonable conception of the present status of the utility under consideration within the community. Following are the questions submitted:

QUESTIONNAIRE

City.................. County.................. Population..........

Has the municipality a sewer system?..................................

If so, does it carry storm water and house sewage combined or house sewage alone?..................................

When was system installed?..................................

What percentage of population is connected with sewer?................

What percentage area of town is sewered?..................................

What means of sewage disposal is employed?..........................

If by tanks, what type, size, etc.?..................................

Where is final effluent from tanks or sewers disposed of?...............

....

Does the municipality have a public water supply?......................

If so, is it owned and operated by municipality?......................

Where is the supply derived from, dug, driven or drilled wells?

....

If from wells, how many, their depths and bores?......................

Are wells cased, if so with what and how deep?........................

How much water is used daily?..................................

What is daily pumpage?..................................

What percentage of population use city water?..........................

What percentage of city area is available to city water?..................

How long has water supply system been in use?..........................

Cost of water service?..................................

152 cities and towns representing 83 per cent of the total number submitted, replied to the inquiry with favorable and satisfactory information, all of which could be easily classified under two separate and distinct heads as positive or negative, the latter aiding materially in so far that it revealed the fact that the city or town as yet, had not considered either water or sewerage proposals.

SEWERAGE

Cities and Towns with Sanitary Sewerage Systems Installed

Of the 152 cities and towns replying 51 or 34 per cent had already installed sanitary sewerage systems. These 51 cities and towns represent an accumulated population of about 176,000 or 20 per cent of the entire population of the State. Among these 51 cities and towns the following groupings specify the distribution of sewerage systems:

TABLE NO. 1

(See also Diagram 2)

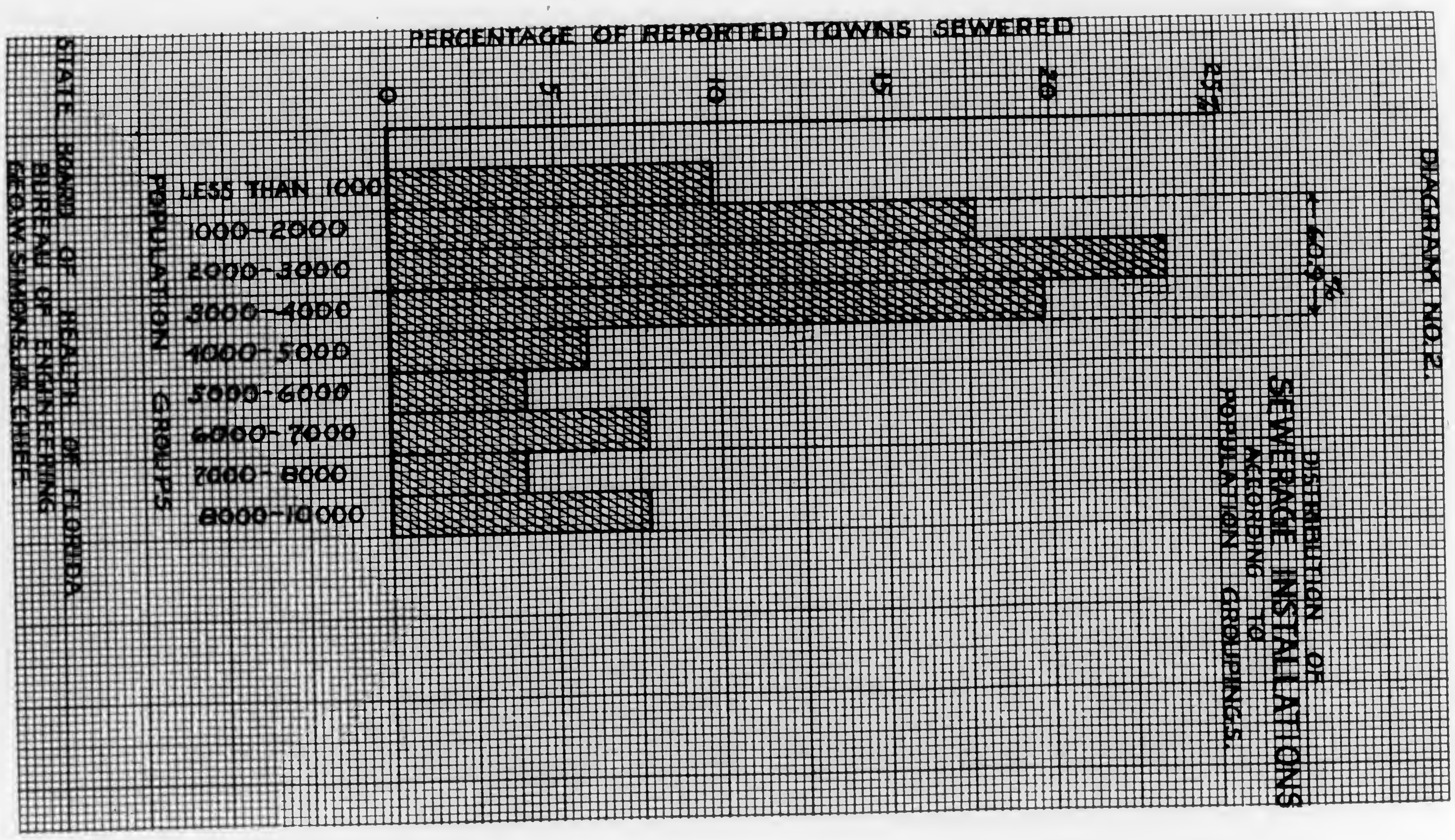
Towns of less than 1,000 people having sewerage	5- 9.8%
Towns having 1,000- 2,000 people having sewerage	9-17.6%
Towns having 2,000- 3,000 people having sewerage	13-25.5%
Towns having 3,000- 4,000 people having sewerage	11-21.6%
Towns having 4,000- 5,000 people having sewerage	3- 5.9%
Towns having 5,000-10,000 people having sewerage	10-10.6%

This table is significant in demonstrating that of the sewer work already constructed a major portion has been executed in municipalities varying in size from 2,000-4,000 population, 47 per cent of the reported sewer systems being in cities and towns falling within this population range. This fact can be more easily comprehended when the phenomenal growth of numerous small towns is noted as shown by the following table which indicates precisely the growth of urban and rural communities as of the Federal census of 1910.

TABLE NO. 2

From U. S. Census of 1910

	1910		1900		1890		Per Cent. of Total Population		
Class of Places	Number of Places	Population	Number of Places	Population	Number of Places	Population	1910	1900	1890
Total Population...	...	752,619	...	528,542	...	391,422	100.0	100.0	100.0
Urban Territory...	23	219,080	12	107,031	12	77,358	29.1	20.3	19.8
Cities and town of 50,000 inhabitants or more..........	1	57,699	...	......	...	....	7.7	....	....
25,000-50,000........	1	37,782	1	28,429	...	....	5.0	5.4	....
10,000-25,000......	2	42,927	3	50,700	3	47,031	5.7	9.6	12.0
5,000-10,000......	6	35,456	...	......	1	5,532	4.7	....	1.4
2,500- 5,000......	13	45,216	8	27,902	8	24,795	6.0	5.3	6.3
Rural Territory....	...	533,539	...	421,511	...	314,064	70.9	79.7	80.2
Cities and towns less than 2,500...	125	87,509	79	53,497	56	30,519	11.6	10.1	7.8
Other territory....	...	446,030	...	368,014	...	283,545	59.3	69.6	72.4



The total sewered population in these small towns between 2,000-4,000 represents 49 per cent of the total estimated population in the 51 reported cities and towns.

Relative to Growth of Florida Towns

Florida is rapidly growing, it is a State of immense territory comprised largely of small embryonic towns which are at this time attracting thousands of homeseekers. In the year 1910, 29.1 per cent of Florida's population resided in municipalities of larger than 2,500 people, while 70.9 per cent resided in towns of 2,500 or less. In 1900 20.3 per cent of the people resided in municipalities of more than 2,500 people, and 79.7 per cent resided in towns of less than 2,500 people, thus we may see that from 1900 to 1910 there was a decrease of 8.8 per cent in, what the Federal Agents designate as, rural territory, and vice versa, there was a similar increase in urban population. It can be safely assumed that this percentage increase occurred in smaller towns, less than 2,500 people. These figures further show that the rural districts of Florida are growing rapidly and that the number of small towns, classed as rural, by the Federal Census, are decreasing and the number of urban communities are increasing, moreover, the smaller towns are growing more rapidly than the larger ones.

Following in tabular form appears the information received from the 51 cities and towns possessing municipal sewerage installations with subsequent sewage disposal.

The table shows upon inspection that:

(1) Practically all sewer construction has been effected during the past five years.

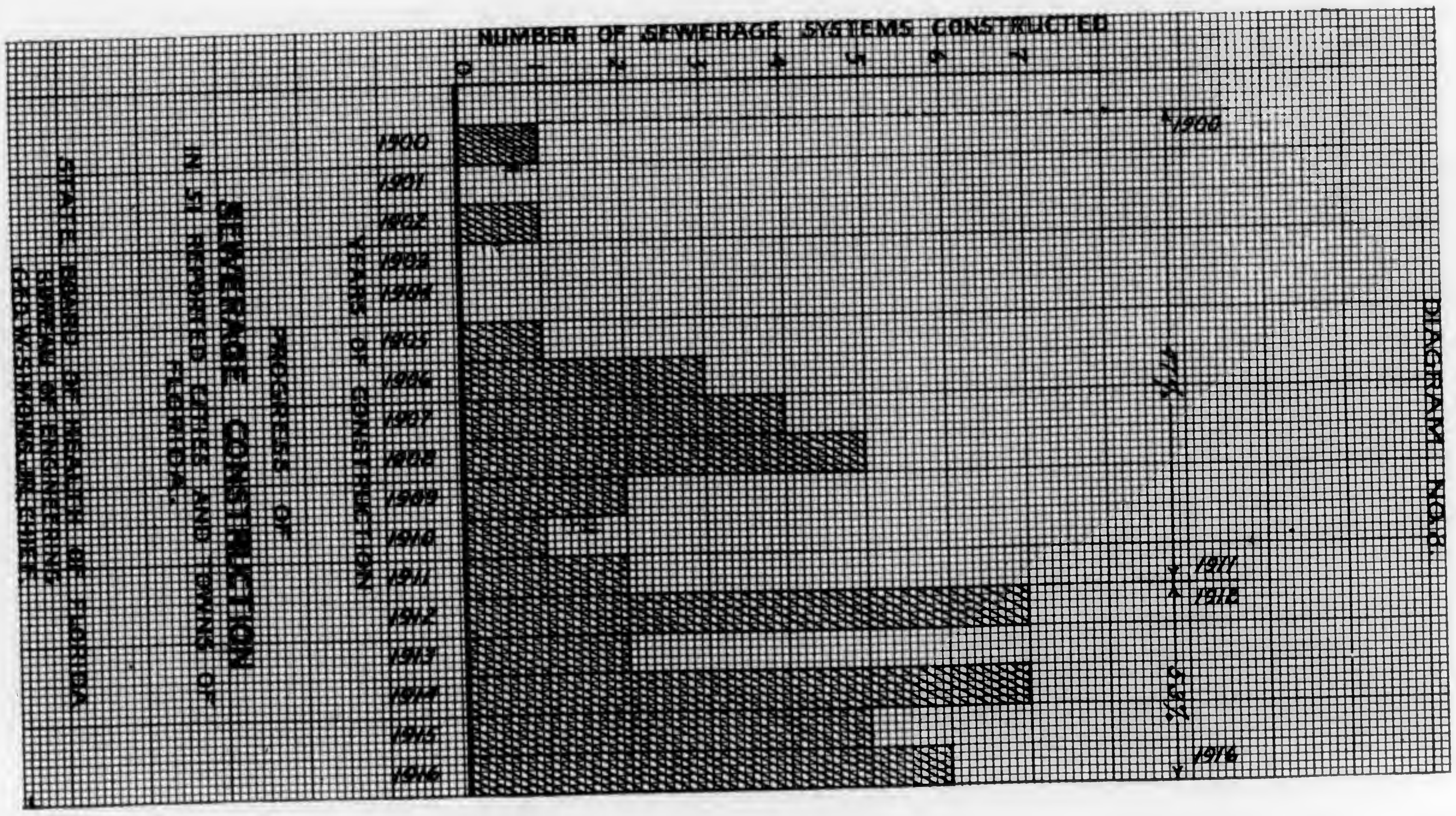
Table No. 3 also Diagram No. 3 presents data showing that during the period from 1912-1916 inclusive, 53 per cent of the 51 reported sewerage systems were completed, the remaining 47 per cent being scattered over the period from 1900-1911 inclusive. In other words, more sanitary construction work of sewerage lines has been effected during the past five years, than during the 12 years preceding 1912.

(2) The percentage of population served and area connected or available to sewerage are small in each instance.

(3) Modern disposal methods are being employed as parts of most recent construction, the Imhoff tank coming into prominence.

City or Town	County	Population (1915)	When Sewerage Installed	Percentage Population Connected	Percentage Area Sewered	Method of Disposal	Disposal of Effluent
Apalachicola	Franklin	3,500	1908	30	50	River	River
Arcadia	DeSoto	2,000	1907	50	40	River	River
Bartow	Polk	3,600	1912	6	50	Cameron Tanks	River
Bradentown	Manatee	3,500	1907	50	25	Septic Tanks	River
Clearwater	Pinellas	2,000	1911	80	50	Imhoff Tanks	Gulf
Dade City	Pasco	2,000	1915	30	20	Imhoff Tanks	Swamp
Daytona	Volusia	7,000	1916	:	80	Screens	River
DeFuniak Springs	Walton	2,500	1909	75	50	River	River
Dunedin	Pinellas	500	1916	25	10	Imhoff Tanks	Gulf
Dunnellon	Marion	1,500	1914	50	90	River	River
Eustis	Lake	1,500	1916	:	82	Imhoff Tanks	Lake
Fernandina	Nassau	3,500	1900	60	70	River	River
Fort Lauderdale	Broward	3,000	1913	15	15	River	River
Fort Meade	Polk	3,500	1914	40	30	River	River
Fort Myers	Lee	4,000	1911	50	60	River	River
Fort Pierce	St. Lucie	2,500	1912	60	60	River	River
Gainesville	Alachua	10,000	1907	40	45	Septic Tanks	Stream
Hastings	St. Johns	600	1914	30	30	River	River
Jasper	Hamilton	1,700	1912	50	50	Septic Tanks	......
Kissimmee	Osceola	4,500	1908	66	:	Septic Tanks	Lake
Lake City	Columbia	5,000	1906	60	60	Septic Tanks	Sink
Lakeland	Polk	8,000	1912	60	40	Imhoff Tanks	Lake
Live Oak	Suwannee	3,500	1908	60	60	Septic Tanks	Sink
Marianna	Jackson	3,200	1906	10	20	River	River
Milton	Santa Rosa	2,000	1914	10	5	River	River
Mulberry	Polk	1,300	1912	75	100	Imhoff Tanks	River

City or Town	County	Population (1915)	When Sewerage Installed	Percentage Population Connected	Percentage Area Sewered	Method of Disposal	Disposal of Effluent
New Smyrna	Volusia	2,200	1915	3	85	River	River
Ocala	Marion	5,000	1916	..	66	Imhoff Tanks	Well
Orlando	Orange	7,000	....	80	60	Imhoff Tanks	Well
Pablo Beach	Duval	1,300	1915	25	75	Creek	Creek
Palatka	Putnam	6,000	1907	75	65	River	River
Palmetto	Manatee	1,800	1915	50	25	River	River
Panama City	Bay	2,200	1912	25	50	Bay	Bay
Pass A Grille	Pinellas	100	1914	100	25	Gulf	Gulf
Perry	Taylor	2,700	1909	65	50	Creek	Creek
Plant City	Hillsborough	3,500	1913	66	75	Imhoff Tanks	....
Punta Gorda	DeSoto	1,800	1914	25	50	Bay	Bay
Quincy	Gadsden	3,500	1908	50	50	Septic Tanks	Creek
Sanford	Seminole	6,000	....	65	10	Lake	Lake
Sarasota	Manatee	2,800	1910	60	40	Bay	Bay
St. Augustine	St. Johns	6,000	....	70	..	River	River
St. Petersburg	Pinellas	10,000	....	85	80	Bay	Gulf
Starke	Bradford	1,200	1916	75	75	Imhoff Tanks	Creek
Tallahassee	Leon	6,000	1905	75	75	Septic Tanks	Creek
Tarpon Springs	Pinellas	2,500	1908	70	70	River	River
Titusville	Brevard	1,500	1906	25	..	River	River
Umatilla	Lake	700	1914	..	..	....	....
Wauchula	DeSoto	2,200	1915	25	25	River	River
West Palm Beach	Palm Beach	4,000	1916	60	30	Lake	Lake
West Tampa	Hillsborough	10,000	1902	25	50	River	River
Zolfo	DeSoto	250	1912	10	50	Creek	Creek



SEWAGE DISPOSAL

The several methods of sewage disposal employed among the various cities and towns are of the utmost significance, because upon their efficiency of operation rests to a great extent, the freedom from nuisance and insurance against common, prevailing nuisances.

Method of Sewage Disposal

As shown by the above table, in the 51 cities and towns tabulated, there are 10 Imhoff tank installations, 2 septic tanks followed by coke filters, 9 "reduction" tanks of the septic type, 1 screen chamber and sterilizer. The remainder of the systems dispose directly into lakes, rivers, bays or sinks.

IMHOFF TANKS

During the past four years and particularly during the past two years, the use of the Imhoff tank system of sewage clarification has increased in popularity. As in other States of the country the popularity of this method of disposal is attracting much attention and the enthusiasm over its advent is leading citizens to hail it as the one great and true "cure all" for their sewage disposal problems.

Explaining the Process of the Imhoff Tank

The Imhoff tank, if properly designed, constructed and operated is a very valuable and excellent means of sewage treatment and clarification, to date one of the best methods advisable in many cases. However, in itself, the Imhoff tank is by no means a final treatment process as many of our citizens are led to believe. It is a preliminary process only and the effluent after discharge from such a tank or from any other tank of the septic type has undergone slight change, excepting a decided clarification. The effluent has reached a suitable state for further treatment by other means. The main and significant point to convey is, this means of disposal does not transform the sewage into a harmless state satisfactory for disposal into underground water bearing strata through the medium of sewage wells—a condemned practice.

Quotation from Dr. Imhoff Concerning the Septic Tank

The Imhoff tank is designed to accomplish two purposes, (1) to allow a settling of the sewage and (2) a better digestion of sludge. In his patent Mr. Karl Imhoff makes the claim that it is "a process for the biological treatment of sewage by means of separate treatment of the solid and liquid constituents characterized by the following: The sewage passing through one or more closed or open settling spaces at such a speed as to permit the lighter particles to come to the surface and the heavier to sink to the bottom and to pass through openings in it with a portion of the liquid into a liquefying space situated below the settling spaces in which they are partly decomposed and liquefied through biological action, whence the liquid passes out of the liquefying space over wires, etc."

Such tanks are not absolute *purifiers of sewage.* They serve largely as clarifiers and depositories for the settleable solids in the sewage, discharging an effluent which is in a better condition for being more readily purified. The subsequent purification or oxidation is generally accomplished by spraying the effluent on beds of coarse stone, or allowing it to filter through sand after a secondary sedimentation. The effluent from a tank is of little better quality than the influent—excepting that most of the solid matter has been deposited or settled. In such tank the upper chamber is so designed as to allow a retention period of from 1.5 to 2 hours, in many cases, 95 per cent of the settling solids are deposited in the lower compartment.

The following quotations from various authorities, give an idea of the work performed by an Imhoff tank. Charles Saville says: "Engineers are familiar with the popular fallacy that so-called 'septic tanks' render sewage pure. The Imhoff tank, like the septic tank or other sewage treatment tanks, does not render sewage 'pure.' It has to do principally with but two steps in the process of sewage purification—first, clarification of sewage; second, treatment of sludge." A large part of the more objectionable impurities in sewage is carried by the water in suspension. The dissolved organic matter can usually be more readily purified after the suspended solids have been removed. It is, therefore, desirable to separate this suspended matter completely from the sewage and dispose of it separately—"it is referred to as sludge."

SEWAGE DISPOSAL PLANT OPERATION

To obtain the highest degree of efficiency in the operation of a sewage disposal plant, the raw sewage and produced effluent should be examined at frequent intervals, from the physical, chemical and bacteriological point of view. One of the most serious handicaps to a disposal plant and one which should be faithfully guarded against, is overloading.

Among small Florida towns the tank installations now installed are generally left to themselves with no supervision or attendance worth speaking of. No laboratory examinations are ever conducted for the purpose of ascertaining working conditions and efficiency of operation. In several instances on record the sewage is flowing directly through the tank with no change taking place—in other words raw sewage is being disposed. In another installation the scum formed on the surface of the sedimentation chamber of an Imhoff tank is never cleaned nor removed and as a result the tank operates as a foul, open septic installation. Too many of our people possess the idea that because a septic tank of one design or another has been installed that naturally its operation is efficient and that the effluent produced is of a favorable quality. Installations of Imhoff tanks at Orlando, Tampa and Clearwater are operating in a comparatively satisfactory manner.

In small towns where Imhoff installations are located same should be examined and cared for no less than four times each month.

Workmanship and Construction

Inferior workmanship and improper supervision of construction work have united in numerous instances giving source to considerable trouble with municipal sewer systems. Poor joints and joint materials have caused the admittance of undue amounts of fine sand and the excess infiltration of ground water into systems, effecting many unfavorable conditions. A large proportion of the sewer work executed in the smaller towns is of an inferior quality, largely due to the methods of construction and methods of supervision employed by the companies in charge, whose primary object was the acquisition of excessive profits.

In making personal surveys over the State, cases of unethical practices have been uncovered, practices condemning the operation of some engineering companies in this State.

SEWAGE AND DRAINAGE WELL PRACTICES

In several instances the practice of driving a well until a porous cavity is penetrated and utilizing this deep well for sewage disposal has been observed in certain localities of Florida. Such a custom cannot be condemned too severely—especially when one considers that practically all our underground water supplies are derived from the same strata wherein sewage is disposed.

The following, by the writer, gives briefly the condition of our limestone water bearing regions detailing the dangers arising from sewage and drainage well practice:

> In central and west central Florida sewerage and drainage wells abound in great numbers. In rural communities, lowlands, swamps and ditches are drained into these wells while cities allow their sewage, storm and street washings access to them. One city in central Florida has 65 wells in operation at present, some of which have been serving their vulnerable purpose for over twenty years; simultaneously in west central Florida another city had, until recently, as many as 150 performing similar functions. Throughout the above named districts the method met with popular favor largely because of its slight expense and because the material was removed expediently with no inconvenience to the owner. Absolutely no thought was expended as to the ultimate destination of the waste matter—after removal from the eyesight it was forgotten. Lately, through the tireless efforts of Health Officers, the people have been taught that wastes discharged into the ground in this manner may contaminate a water supply—possibly the very water the citizens of a particular town are consuming.
>
> Cities and towns, as well as individuals, are perpetuating this nuisance even now in the face of the existing statute. Modern sewerage systems are being or have been installed in small cities automatically eliminating numerous individual sewage wells. However, this procedure only transfers many probable points of pollution to one or several. The sewage from an individual household is conveyed in practically all cases, where sewerage exists, to one or several points of disposal where it receives treatment in a tank of one or another type. After such supposed "purification" it is discharged into the deep well, therefore transferring numerous potential points to one point of pollution. Because a treatment device has been provided the citizens feel safe and secure and fear no danger from the egress of sewage effluent underground although in this way the city, the collective individuals, are liable to seriously contaminate a water supply. Moreover in these same sewered cities are prominent, able citizens whose residences are easily accessible to and capable of being connected with the sewer, but are not. These people still adhere to the disagreeable individual deep well, preferring this economical, convenient, insanitary method to the more expensive and sanitary sewer connection. Practice of this character within range of sewerage is to be condemned and criminal action should be instituted against such individuals.
>
> There is stated in a report of the United States Geological Survey[1] as follows: "The axis of the peninsula of Florida consists largely of rotten cavernous limestone, white, gray or yellow in color and of the Tertiary age. The main belt of these beds extends from the vicinity of Taylor,

---

[1] Water Supply & Irrigation Paper No. 114, page 160.

Madison and Suwannee Counties southeastward to Pasco County and vicinity." The formation is soft, porous and in some places is abundantly fossiliferous as shown by geological investigations, and has a varying thickness which Dall[2] estimates to be over 350 feet at Gainesville, 212 feet at Lake Worth and 1,068 feet at St. Augustine. Recent borings, however, show this limestone to have a thickness of over 225 feet at Quincy, 250 feet at Alachua, and 325 feet at Bartow, dipping southward and to the sea. Because of the soft, porous character and the high carbonate content the Vicksburgian water bearing formation is subject to the intense solvent action of acids and gases inherent in the water. Rain in descending to the earth dissolves large percentages of carbon dioxide which is retained in lower regions of high pressure. In addition the water in passing through the soil and over the ground collects mineral and organic acids, also more carbon dioxide which results from organic decomposition. This carbonic acid greatly increases the solvent action of the water and lime, magnesia and other elements are rendered soluble.

The presence of sink hole depressions, and numerous lakes, is conclusive evidence of the existence of underground solution cavities, caverns and passages and show the honeycombed condition. "A level surface and a porous soil such as that of the lake region, favor the development of caverns because most of the rain fall sinks into the earth instead of off over the surface. As solution progressed the cavern roofs became weakened at numerous points and collapsed forming the depressions known as sink holes." (Water Supply Paper No. 319). That solution action is intense has been revealed at Silver Springs near Ocala where Mr. E. H. Sellards has estimated a removal of 340 feet of solid matter per minute from the interior. These brief statements disclose the honeycombed cavernous conditions of the Vicksburgian formation, moreover, there is no absolute assurance that passages and cavities on one level do not communicate with those of another level. Because of the conditions existing in the limestone formation, the presence of void spaces and passages it is apparent that the one great water supply is being endangered by probable sewage contamination.

All the water supplies in the State of Florida excepting three are derived from wells driven into the Vicksburgian limestone formation, that expansive bulk of acid-eaten geologic formation into which sewage and drainage wells also discharge. The water supply is extensive, almost without limit, and certain of production. Because of its practically universal usage the purity and wholesomeness should be maintained. The water, although very hard is of a good quality for domestic use, its hardness not being any greater than that of similar waters elsewhere in the country. In many cases, especially in regions of flowing wells, a decided sulphur content is noted, which is largely eliminated by aeration. But with this immense underground supply, unlimited in quantity, coming from such cavernous honeycombed stratum, it is evident that its safe qualities should not be jeopardized by the careless discharge of sewage. In one city the sewage tank effluent enters a well within one-quarter mile of a deep water well, the sewage well penetrating a cavity at a depth of 150-200 feet. In another city raw sewage is disposed of into a well serving practically one-tenth of the city, this well being located within one-half mile of the city's three water well supplies, the only supply the city could possibly have. In all the localities sewage wells enter this same water bearing stratum, that rotten, cavernous mass of underlying limestone. Mr. E. H. Sellards, State Geologist of Florida has stated in his 1908 Bulletin, "The question of possible contamination of the water supply through sewage wells is worthy of careful consideration. As previously stated, most of these wells enter the limestone and depend for efficiency upon reaching a cavity or a porous layer in the limestone. Both sewage and water wells are of variable depths. The limestone is traversed by solution cavities, and is for the most part of porous texture, thus permitting circulation of underground water."

---

[2] Bull. U. S., Geol. Survey No. 84, 1892, page 103.

[3] Water Supply and Irrigation Paper No. 319, page 74.

Up to the present time no actual disease or epidemic has been traced to water having its source in sewage infected strata; however, cases of seriously contaminated wells have been noted and analyses made in the laboratory of the State Board of Health upon samples drawn from such infected wells. Enough analyses have been made upon deep well waters to convince one that the underground sources are being affected and are capable of a serious contamination. In one city a private deep well located 1.3 miles from a city sewage tank has shown intermittent pollution for the past four months while in another city the entire public supply has been badly polluted with the result that at present liquid chlorine is being applied as a disinfectant. The latter well which is about 1,100 feet deep has shown colon in raw water for the past nine months. Consequently sufficient evidence is available to indicate the possibility of a serious pollution of the underground sources."

Relative to Surveys of Sewage Wells

During the current year, 1917, a complete survey of the sewage well nuisance will be instituted, an exhaustive study made to determine the axact extent to which potable water supplies are being endangered. The custom is one which may eventually lead to serious epidemics such as visited the city of Lausen, Switzerland in 1872. By the end of this current year it will be absolutely necessary for every city, town, corporation or individual to observe our state law concerning the discharge of sewage into underground waters, Chapter 6443 (No. 23) Laws of Florida. If the law cannot be complied with peacefully by all who are now violating same, legal procedure must needs be brought to bear.

Raw Disposal

It will also be noted from the above table that in many cases (30) sewer outlets dispose their raw effluent directly into open streams. In some instances this is permissible, especially along the Peace River, where the quantity of sewage entering is small, and the quality of the entering sewage is comparable to the water flowing in the stream, which carries considerable wash from the phosphate lands and is highly turbid and alkaline. However in some instances it will be necessary to enforce the laws of Florida, Chapter 5954 (No. 85) relative to Polution of Waters. Several cities are now observing this law and at present are preparing plans for treating their sewage effluents—one city being St. Petersburg.

CONCLUSION

The activities in sewerage construction and sewage disposal installations are increasing annually throughout the

State. In the future more care must be exercised in the supervision and inspection of construction work. During the present year the work along these lines will represent an expenditure of thousands of dollars of public money. More attention must be devoted also to the proper and most applicable methods of sewage disposal moreover to the efficient operation of such installations.

A sewage disposal plant of any available type needs constant care and attention in order to produce an effluent meeting the requirements for which the particular installation was designed. Efficiency is the primary result of a properly operated plant. If the plant is of the Imhoff type care must be frequently exercised towards the tank cleaning and disposal of sludge, furthermore the sedimentation basins and gas chambers need frequent inspection.

Activated Sludge

Recently a new process of Sewage treatment has been experimented with, found to be satisfactory and efficient—namely, activated sludge. This process of sewage treatment consists of a forced aeration and oxidation rendering an effluent possessing an excellent clarified and stable quality. During the past two years extensive experiments have been conducted in various places in the county and at this writing the process is firmly established. The method seems to be especially favorable to warm climates and in the mind of this department deserves a serious consideration in Florida as a solution of many of our sewage disposal problems.

At Houston, Texas and Pasadena, California, the process has resulted so favorably that these two cities upon advice of their engineers have adopted the system for use.

Recommending an Experimental Plant for Activated Sludge

An experimental plant should be established at our headquarters in Jacksonville for further experimenting under Florida conditions to ascertain whether or not the sewage disposal problems confronting many of our inland towns not located on streams or bays could be satisfactorily solved. An experimental plant would advance a quantity of data useful to the citizens and municipalities of our State and would eventually save sums of public funds now expended on totally unfit and unsuited processes. It is to be advocated that the Board sanction the establishment of such plant for the further study of this process under such conditions as we are living, and appropriate necessary funds for the conduct of necessary experiments.

During the year an efficiency study will be conducted on all sewage disposal plants in the State in order to ascertain the exact operating troubles. The laboratory is now equipped to handle these sewage analyses properly with speed and facility.

PART II

WATER SUPPLIES

The municipal water supplies in the State of Florida are, with three exceptions, derived from the underground porous limestone or sand strata. According to investigations conducted by the U. S. Geological Survey and the Florida State Geological Survey, there are several distinct water bearing areas capable of producing public supplies, these strata underlying the surface at varying depths. That the supply of water retained in these underlying porous strata is abundant is shown by the following taken from W. S. Paper No. 319, U. S. G. S.:

> "The thickness of the sands and porous limestones in Florida is known to exceed 1,200 feet, and, assuming an average porosity of 20 per cent of their volume, these rocks contain enough water to cover the entire surface of the State to a depth of more than 240 feet. This estimate should not be taken as a measure of the amount of potable water, because the deeper waters in Florida are too highly mineralized to be classed as such."

Water Supply from Vicksburgian Limestone

However, the principal water supply over a major portion of the State as determined by the above two surveys, is the porous Vicksburgian limestone. There are also extensive areas of water bearing sands furnishing sources for shallow wells.

The limestone of the Vicksburg group, although rather dense in some parts, are open and porous, making their water bearing capacity of great significance. The Vicksburgian limestones are rocks of Oligocene series and "are not only the most important source in the large areas of flowing wells, but they also furnish the largest supplies in areas where wells do not flow." The Apalachicola group including the Chattahoochee, the Hawthorn and the Alum Bluff formations are also other important sources of water supply. Rainfall is the primary source of all our water supplies. After falling to the earth a portion of the water is evaporated, a portion runs off into streams and other surface reservoirs while the remainder flows into the ground by gravity through the porous interstices of the sands and limestones. The Vicksburg deposit underlies all of Florida and extends into other States. In passing through the air, over the ground surface and into the soil the original rain water absorbs quantities of carbonic acid gas, mineral and organic acids. The retained gases upon reaching regions of greater pressure become highly active in decomposing the porous limestones with the subsequent formation of caverns, cavities, underground passages and surface sink holes. In Part I under Sewage Wells, this action is more fully amplified.

There are, in certain portions of the State large areas of artesian flow, areas where the presence of free flowing wells are common. The accompanying map from Bulletin No. 1 of the Florida State Geological Survey, shows by means of shaded areas, the regions of artesian supplies, particularly along the East Coast and the South Western Coast.

Municipal Water Supplies Derived from Underground Sources

The municipal water supplies derived from the several underground sources are, generally speaking, of a satisfactory potable quality suitable for domestic use, although sometimes disagreeably hard, a quality arbitrarily attributed to a water by the quantity of soap consumed in the production of a lather. This hardness varies in different parts of the State, being much more pronounced in regions of artesian flow. Another disagreeable quality of underground waters is the presence of sulphur gas, which is very perceptible in DeSoto and Lee Counties. The surface waters in Southern Florida are comparatively clear, soft and highly colored, those from the shallow limestones possess a high calcium bicarbonate content and in some cases are contaminated by salt water infiltration. This water causes much perceptible foaming when utilized for boiler purposes.

The water derived from the sands is generally low in solids and possesses only an average degree of hardness and furnishes many small domestic supplies. The waters from the Vicksburgian areas are highly mineralized, are in many cases contaminated by salt water, are excessively hard and corrosive.

This supply is largely devoted to sewer and plumbing fixture flushing. In central northern and west Florida the water from the Vicksburgian limestones contains more or less calcium carbonate, is hard, contains in some instances a sulphurous odor and taste.

A large portion of the water obtained from the underlying strata is highly impregnated with hydrogen sulphide (H_2S), especially noticeable in wells of artesian flow and absent from other supplies derived from deep wells by means of air lift and deep well pumps, as in areas of west Florida. This hydrogen sulphide does not necessarily indicate the presence of sulphur beds, as many people believe, but generally represents the decay of organic matter. In areas where a porous limestone lies at or near the surface of the ground the sulphur gas generally finds a means of escape and for that reason is absent from many municipal supplies.

TASTE AND ODOR

The sulphur odor and taste is due to an impregnation of hydrogen sulphide which may originate in any one of the following ways: (Sellards, 1908 Report):

(1) The decay of organic matter containing sulphur.
(2) The reaction of organic matter upon sulphides or sulphates.
(3) The reaction of acid upon sulphides.
(4) The partial oxidation of sulphides.

Referring to the Sulphur Taste of Some Underground Waters

The sulphur taste so noticeable in some districts does not indicate the presence of large sulphur deposits, but instead the source of the sulphurous odors and taste is undoubtedly organic matter, together with metallic sulphates and sulphides.

The amount of hydrogen sulphide a water is capable of retaining is influenced by the pressure—the following by Mr. Sellards, in the Fifth Annual Report of the State Geological Survey discusses this retention ability:

> "The quantity of H_2S gas which the water is able to hold in solution under these conditions, is determinated by the pressure. The law of the solubility of gases in liquids is as follows: The quantity of the gas which the liquid is able to dissolve is directly proportional to the pressure on the gas. In the open, porous limestone with no confining stratum above, the water at the top of the underground water level is merely under atmospheric pressure. After passing the underground water level, however, the pressure increases rapidly. The increase of pressure is not simply that due to the atmosphere, but that due to the weight of the overlying

> column of water plus the atmosphere. According to Van Hise, the pressure, which really is determinative as to the amount of gas which may be held in solution, is that of a column of water extending to the free surface, plus the atmospheric pressure. From this law it follows that water at a great depth and under great pressure is capable of holding a large quantity of hydrogen sulphide in solution. When brought to the surface the pressure is relieved and the gas rapidly escapes."

In instances where well water supplies possess this disagreeable sulphur content a means of artificial aeration can be effectively and profitably employed, which means that the water is brought into immediate contact with the atmosphere, thus allowing the loosely bound sulphur gas access to the air and freedom. There are cities and towns in the State, however, not employing any means of eliminating this objectionable quality, notably several towns in southwestern Florida, as Wauchula, Fort Meade and Punta Gorda. These places consume the "Sulphur Water" directly as it issues from well and is delivered to the consumer. When one considers that this disagreeable and objectionable sulphur can be effectively removed, easily and readily without the incurrence of a great expenditure by a mere spraying into the air, it does not seem apparent that such cities and towns would withstand the unpleasant feature longer, but would resort to methods of artificial aeration as have previously been recommended to them by this Bureau of Engineering.

Softening of Water

The hardness of a water and the disagreeable odor and taste are practically the only physical embarrassments which the municipal water supplies of Florida suffer. The former can be easily remedied by processes of softening, several being available on the market at reasonable expenditures. Hardness of a municipal water supply has a depreciating influence upon the ultimate value of the water. The value of any production is determined by its demand and utility. Likewise the value of a water for several uses is determined by its inherent quality —one being its hardness.

Bacteriologically the water supplies of the State are normal and compare favorably with similar supplies elsewhere in the country, in most instances the freedom from contaminating influences is apparent. However, in consideration of the sewage and drainage wells referred to in Part I, of this report, potential danger is always lurking in the vicinity of a pure underground water supply. In localities where sewage and drainage wells are employed the otherwise pure water is in constant danger of pollution because of the exceptionally soft and physical conditions exhibited by the retaining limestones. One instance has already been noted of the contamination of a pure water supply, undoubtedly brought about in such a manner.

In order to ascertain a reasonable and far-reaching view of the water supply situation in the State of Florida several general questions pertaining to this utility were submitted on the question blank sent forth to the 184 cities and towns referred to in Part I of this report.

Referring to the table following (Table IV) it can be noted that 86 of the 152 blanks received reported the operation of a municipal water supply, all of which are deep, drilled, cased wells with the exception of three surface lake supplies.

WATER CONSUMPTION

Meterage of Water Consumed

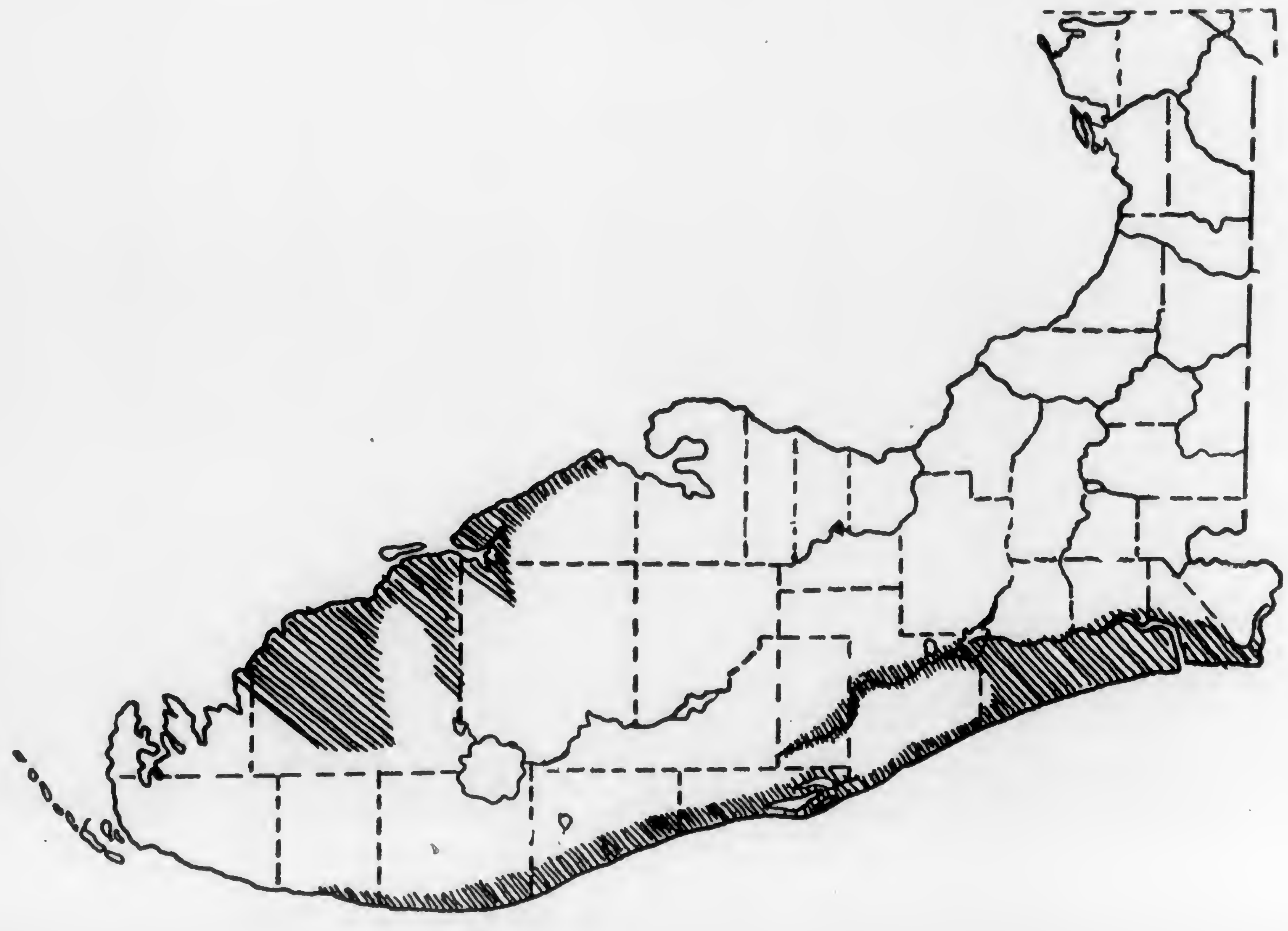
The rate of consumption of a public water supply is of prime significance to the community utilizing it. The underground sources, although of immense quantity, should be considered as limited in the amount which they can produce and have available for use, consequently some reasonable restrictions should be imposed upon citizens who consider it their duty to utilize an unlimited amount of water. During the conduct of sanitary surveys in various parts of the State I have tried to emphasize the advisability of such a restriction by means of systematic meterage, in order to encourage the citizens, and amplify to them the eventual benefits to be derived from such a definite process of economy. The following table (Table V) shows clearly the results collected from a number of Florida cities (39) relative to the question of meterage and consumption. This table shows that several places have already undertaken to restrict the use of their water supply and are profiting by such wise action. In this table 6 cities have one hundred per cent metered supplies with a corresponding aggregate consumption of 930,000 gallons used by an aggregated population of 21,300 which means a per capita consumption of approximately 44 gallons per day. On the other hand an aggregate population of 11,800 use 650,000 gallons of water

TABLE NO. 4
WATER SUPPLY OF FLORIDA MUNICIPALITIES

Towns	County	Population	Water System Private or Municipal Owned	Source	Depth of Well	Daily Consumption	Percentage Population Using Water	Installed
Apalachicola	Franklin	3,500	Yes	Wells	400′	....	50	1908
Arcadia	DeSoto	4,500	Yes	Well	300′	275,000	60	1907
Bartow	Polk	4,000	Yes	Well	725′	....	..	....
Bonifay	Holmes	922	Private	Well	518′	45,000	..	....
Bradentown	Manatee	3,700	Yes	Well	720′	100,000	50	1908
Branford	Suwannee	500	Yes	Well	325′	4,000	90	1914
Bunnell	St. Johns	400	Private	Well	300′	5,000	100	1911
Campbellton	Jackson	250	Yes	Well	350′	5,000	75	1909
Center Hill	Sumter	700	Private	Wells	...	....	5	1906
Chipley	Washington	2,000	Yes	Well	131′	180,000	40	....
Clearwater	Pinellas	2,000	Yes	Well	40′	150,000	85	1911
Crescent City	Putnam	1,000	Private	Well	...	....	25	1890
Dade City	Pasco	1,050	Yes	Well	90′	20,000	75	1914
Dania	Brevard	1,000	Yes	Well	86′	50,000	60	1914
Daytona	Volusia	4,000	Yes	Well	200′	200,000	90	1909
Daytona Beach	Volusia	600	Yes	Well	174′	150,000	85	1914
DeFuniak Springs	Walton	2,500	Yes	Well	500′	50,000	75	1908
DeLand	Volusia	4,000	Yes	Well	400′	150,000	75	1890
Delray	Palm Beach	150	Yes	Well	63′	75,000	33	1914
Dunedin	Pinellas	500	Yes	Well	80′	10,000	75	1916
Dunnellon	Marion	1,500	Yes	Well	160′	125,000	90	1906
Eustis	Lake	1,500	Private	Well	275′	200,000	90	1910
Fellsmere	St. Lucie	800	Private	Well	375′	....	75	1913
Fernandina	Nassau	5,000	Yes	Well	500′	500,000	70	1886
Fort Lauderdale	Brevard	3,500	Yes	Well	80′	50,000	25	1913
Fort Meade	Polk	2,500	Yes	Well	840′	65,000	30	1914
Fort Myers	Lee	4,000	Yes	Well	550′	100,000	50	1911
Fort Pierce	St. Lucie	2,500	Yes	Well	80′	30,000	67	1912
Gainesville	Alachua	10,000	Yes	Well	195′	....	..	1882

AREAS OF ARTESIAN FLOW IN FLORIDA

From Bulletin No. 1, Florida Geological Survey



STATE BOARD OF HEALTH OF FLORIDA
Bureau of Engineering
Geo. W. Simons, Jr., Chief

TABLE NO. 4—Continued

WATER SUPPLY OF FLORIDA MUNICIPALITIES

Towns	County	Population	Water System Private or Municipal Owned	Source	Depth of Well	Daily Consumption	Percentage Population Using Water	Installed
Hampton	Bradford	500	Private	Well	100′	11,000	30	1912
Hastings	St. Johns	500	Private	Well	200′	....	75	1911
High Springs	Alachua	2,000	Yes	Well	415′	90,000	95	1913
Jasper	Hamilton	1,700	Private	Well	400′	60,000	10	1896
Jennings	Hamilton	600	Yes	Well	308′	10,000	60	1906
Kissimmee	Osceola	2,100	Yes	Well	400′	....	..	....
Lake City	Columbia	5,000	Yes	Well	400′	200,000	70	1906
Lake Worth	Palm Beach	1,000	Yes	Well	65′	100,000	60	1913
Lakeland	Polk	8,000	Yes	Well	600′	....	80	1906
Largo	Pinellas	450	Yes	Well	100′	15,000	80	1915
Leesburg	Lake	1,500	Private	Well	100′	200,000	100	1909
Live Oak	Suwannee	3,500	....	....	...	....	..	....
Malone	Jackson	700	Private	Well	300′	25,000	95	1911
Marianna	Jackson	3,150	Yes	Well	600′	....	75	1914
Mayport	Duval	400	Private	Well	600′	....	..	....
Melrose	Alachua	250	Private	Well	10′	2,000	60	1900
Milton	Santa Rosa	1,700	Yes	Well	110′	150,000	25	1914
Monticello	Jefferson	1,800	Private	....	...	....	..	....
Miami	Dade	8,000	....	....	...	....	..	....
Mulberry	Polk	1,300	Yes	Well	350′	125,000	80	1908
Newberry	Alachua	1,000	Yes	Well	85′	40,000	95	1913
New Smyrna	Volusia	2,200	Yes	Well	1,200′	3,000	2	1916
Ocala	Marion	4,000	Yes	Well	...	....	..	....
Orlando	Orange	6,000	Private	Lake	...	1,500,000	100	1888
Ormond	Volusia	900	Private	Well	150′	....	..	....
Okeechobee	St. Lucie	1,500	Private	Well	280′	....	10	1915
Pablo Beach	Duval	1,340	Private	Well	750′	....	75	1895
Palatka	Putnam	6,500	Yes	Well	230′	900,000	75	1908
Palm Beach	Palm Beach	2,000	Private	Lake	...	....	90	1893

TABLE NO. 4—Continued

WATER SUPPLY OF FLORIDA MUNICIPALITIES

Towns	County	Population	Water System Private or Municipal Owned	Source	Depth of Well	Daily Consumption	Percentage Population Using Water	Installed
Palmetto	Manatee	1,800	Yes	Well	800′	125,000	75	1908
Panama City	Bay	2,200	Yes	Well	600′	....	75	1910
Pass-a-Grille	Pinellas	80	Yes	Well	315′	50,000	100	1914
Perry	Taylor	2,500	Yes	Well	100′	....	75	1916
Pinellas Park	Pinellas	250	Private	Well	400′	10,000	90	1913
Plant City	Hillsborough	3,500	Yes	Well	400′	150,000	50	1906
Ponce de Leon	Holmes	300	Private	Well	220′	....	75	1914
Port Tampa City	Hillsborough	1,067	Yes	Well	90′	16,000	20	1911
Punta Gorda	DeSoto	1,800	Yes	Wells	150′	8,000	25	1914
Quincy	Gadsden	3,200	....	....	...	....	..	....
Sanford	Seminole	6,000	Private	Well	250′	600,000	65	1913
Sarasota	Manatee	2,800	Yes	Well	450′	50,000	50	1909
Seabreeze	Volusia	1,000	Yes	Well	200′	15,000	50	1914
St. Augustine	St. Johns	6,144	Yes	Well	400′	580,000	88	1897
St. Petersburg	Pinellas	10,000	Yes	Well	110′	500,000	75	1908
Sneads	Jackson	600	Yes	Well	90′	....	50	1901
Starke	Bradford	1,150	Yes	Well	529′	30,000	25	1901
Tallahassee	Leon	6,550	Yes	Well	600′	150,000	80	1886
Tarpon Springs	Pinellas	2,500	Yes	Well	127′	185,000	75	1908
Titusville	Brevard	1,500	Yes	Well	97′	35,000	40	1913
Wauchula	DeSoto	1,800	Yes	Well	600′	60,000	25	1914
West Palm Beach	Palm Beach	5,000	Private	Lake	...	....	70	1896
West Tampa	Hillsborough	12,000	Yes	Well	...	626,000	75	1901
Williston	Levy	850	Private	Well	190′	8,000	5	1910
Winter Garden	Orange	800	Private	Well	300′	80,000	75	1912
Winter Haven	Polk	2,000	Private	Well	612′	150,000	100	1910
Winter Park	Orange	800	Private	Well	300′	20,000	70	1913
Zolfo	DeSoto	250	Private	Well	600′	10,000	75	1912

TABLE NO. 5

City or Town	Estimated Population	Number of Services	Number of Meters	Total Average Daily Consumption (Gallons)	Ownership of Works	Percentage Metered	Range in Pressure in lbs. per inch Ordinary	Fire
Arcadia	3,000	400	200	275,000	Municipal	50	45	..
Bradentown	3,750	500	500	100,000	Municipal	100	48	85
Chipley	2,000	170	...	150,000	Municipal	..	40	100
Clearwater	3,000	508	275	150,000	Municipal	54	40	..
Dade City	1,990	140	100	35,000	Private	72	50	50
Dania	1,000	75	...	250	Municipal	..	35	75
Daytona	5,000	715	715	250,000	Municipal	100	50	85
DeFuniak Springs	2,500	263	263	60,000	Municipal	100	65	80
DeLand	4,000	950	900	175,000	Municipal	95	43	120
Fort Meade	3,500	226	88	65,000	Municipal	39	65	100
Fort Myers	5,000	390	...	250,000	Municipal	..	40	80
Gainesville	8,500	916	650	560,000	Municipal	71	45	110
High Springs	2,500	200	...	120,000	Municipal	..	40	125
Lakeland	7,000	1,200	400	200,000	Municipal	34	60	125
Lake City	5,032	400	300	180,000	Municipal	75	40	100
Lake Worth	1,000	150	150	30,000	Municipal	100	45	90
Largo	460	70	29	14,000	Municipal	41	45	150
Live Oak	3,500	500	450	500,000	Municipal	90	42	100
Marianna	3,000	400	144	90,000	Municipal	36	30	100
Milton	2,000	120	40	83,000	Municipal	33	62	125

TABLE No. 5—Continued

City or Town	Estimated Population	Number of Services	Number of Meters	Total Average Daily Consumption (Gallons)	Ownership of Works	Percentage Metered	Range in Pressure in lbs. per inch Ordinary	Fire
Mulberry	1,300	350	...	125,000	Municipal	..	52	75
Newberry	1,100	85	65	14,000	Municipal	77	35	42
New Smyrna	2,500	50	50	10,000	Municipal	100	35	100
Palmetto	1,200	207	200	200,000	Municipal	97	50	125
Pass-a-Grille	80	80	10	65,000	Municipal	12	30	120
Perry	2,500	229	229	315,000	Municipal	100	40	100
Pinellas Park	300	59	19	8,000	Private	32	20	..
Plant City	4,000	...	370	600,000	Municipal	..	50	70
Quincy	3,500	350	300	100,000	Municipal	86	40	80
Sanford	5,000	550	215	600,000	Private	39	45	125
Sarasota	2,800	274	255	50,000	Municipal	93	52	52
St. Augustine	5,600	1,055	575	450,000	Municipal	55	45	90
St. Petersburg	8,000	2,000	1,925	500,000	Municipal	96	39	95
Starke	2,000	260	9	30,000	Municipal	95	43	100
Tallahassee	6,550	771	771	175,000	Municipal	100	45	150
Tarpon Springs	2,000	450	420	185,000	Municipal	93	45	125
Titusville	1,500	110	62	35,000	Municipal	56	40	100
Wauchula	2,000	225	75	50,000	Municipal	33	45	45
Winter Park	800	150	140	45,000	Municipal	93	40	50

per day unmetered which represents practically an approximate daily consumption of 55 gallons per capita. It is to be encouraged and be further emphasized that a municipal water supply should be reasonably restricted in its use, just as much as any other public utility, as for example, electricity for lighting purposes. This has been particularly stressed in every sanitary survey conducted during the six months just ended by the Department of Engineering and it is to be hoped that the cities and towns so advised have profited by the information imparted to them.

Referring to Treatment Plants

There are in the State of Florida, four treatment plants for the complete sterilization of domestic water supply. These installations are all of the liquid chlorine type, and are located in diverse sections of the State, treating the waters from deep wells. There are also several treatment plants in the State for softening hard water, notably the ones at Port Tampa and Daytona, but to date no filtration plants or other treatment devices for the improvement of the quality of our municipal water supplies have been installed. In one instance the liquid chlorine plant was installed because the underground source had been unquestionably polluted by a discharge of sewage into a porous cavity. In the remaining instances the liquid chlorine apparatus was installed as a safeguard against possible contamination at any future time. Cities pursuing the latter course are to be commended for their action.

Liquid Chlorine Apparatus

The ground waters of Florida are commonly clear and colorless and extensive or comprehensive treatment is not necessary and whenever needed can be accomplished by means of a liquid chlorine apparatus. It is with great pleasure that I bring to the attention of the Board, the acquisition of an emergency liquid chlorine control apparatus, which can be shipped to any point in the State and connected with the water supply mains in case of emergency or epidemic. The Bureau is indebted to the Wallace & Tiernan Company, of New York, for their extreme kindness, and generosity in loaning this valuable apparatus to it. The control is of a most modern type capable of supplying the sterilizing agent and protecting any community during the progress of epidemic outbreaks due to water. During this current year, 1917, further sanitary investigations will be conducted into our water supplies and numerous extensive examinations will be made into the qualities of such supplies, furthermore an exhaustive survey is now being instituted of all available resort springs in the State of Florida.

SPRINGS

There are, existing, in several parts of our State, springs, the waters from which, because of their so-called health-giving qualities, attract numerous tourists to them. In some instances closer attention and more strenuous efforts are spent in beautifying hotel grounds and providing for the tourist accommodations rather than the significant attraction—the spring. In consequence thereof, this survey is being instituted and before another year elapses, these springs will be advised as to the proper protection of their quality.

PART III

WATER AND SEWAGE LABORATORY

On November 15, 1916, the water and sewage analytical work was divorced from the routine work of the central laboratory, primarily because its operations were in the province of and under the direct supervision of the Bureau of Engineering, as recommended by Dr. Carroll Fox, of the U. S. Public Health Service, secondly because the increase in the amount of work being accomplished demanded an expansion. At this time the work is being effectively and efficiently performed by Mr. A. F. Shuey. Previous to November 15th, all the analytical work was confined to bacteriological examinations of water alone, this being done in a most approved and satisfactory manner by Mr. H. D. Venters of the central laboratory staff.

Studies of Water and Sewage to be Carried on by This Laboratory

The work of the water and sewage laboratory is broadening in scope and instead of performing bacteriological analyses alone, detailed chemical analyses are being executed on both waters and sewages. In the future this work will further include a thorough qualitative study of water supplies from every angle of vantage, studies of hardness throughout the State, studies of treatment methods, studies of purification processes, etc. This detailed work will undoubtedly increase to such an extent that additional assistance will be necessary before many months have elapsed. A great amount of practical and exceedingly useful data and information can be acquired in this laboratory by proper and hearty cooperation between citizens, Board and employees.

Collection of Samples of Water for Examination

Considerable difficulty has been experienced in the proper collection of water samples, a majority of the people not realizing the great degree of care necessary in collecting and packing a sample for examination in our laboratory. Numerous instances are recorded where first samples submitted have shown indices of pollution, but upon collecting a second sample with more care the resulting analysis was favorable. In other words, the examination of a sample taken carelessly and not in strict accordance with the instructions enclosed with each container, received a very unfavorable interpretation—sufficient in every case to condemn the supply.

Since July 1st, 1916, a total of 292 water examinations have been made upon samples submitted to the laboratory, samples sent from all parts of the State by both municipalities and private individuals. A large percentage of these analyses were performed for railroad companies operating within the State for proper certification of water used, in interstate traffic; fifty such examinations being made, divided among the railroads as follows:

Atlantic Coast Line	13
Seaboard Air Line	13
Florida East Coast	15
Georgia, Florida and Alabama	1
Marianna, Blountstown R. R.	2
Georgia, Florida & Southern	2
Live Oak, Perry & Gulf	1
Tampa Northern	1
Birmingham, Columbus & St. Andrews	1
Standard & Hernando	1

THE SIGNIFICANCE OF A BACTERIAL EXAMINATION OF WATER

"The bacterial analysis made applies only to the sample of water examined. If this sample has not been contaminated in taking, and has been received in the laboratory not later than twelve (12 hours after it was taken, having been properly iced during this period, the analysis will show the condition of the water from which the sample was taken, at the time of sampling.

A single bacterial analysis is of limited usefulness, as it will tell only of the condition of the water at the time of taking. Therefore, bacterial analyses must be made at different times and from these the sanitary qualities of the water supply may be more accurately determined."

Owing to the past unnecessary difficulties it is to be recommended that henceforth when samples of water are submitted that such samples shall be collected according to specifications, by an Assistant to the State Health Officer, or by any other reliable person recommended as capable of performing such work.

Furthermore, in order to keep a closer check upon the qualities of our municipal supplies, it is to be recommended that each municipality in the State submit monthly samples for examination.

During the six months ending December 31, 1916, samples of water from both private and municipal supplies, were examined from the following cities and towns:

Apalachicola,
Baldwin,
Bushnell,
Chipley,
DeLand,
Dunnellon,
Fernandina,
Gainesville,
Homestead,
Kissimmee,
Lakeland,
Mayport,
Monticello,
Ocala,
Punta Gorda,
Reddick,
St. Andrews,
Sebring,
Tampa,
Winter Haven,
Arcadia,
Bartow,
Carrabelle,
Crystal River,
Dowling Park,
East Palatka,
Fort Meade,
Hampton Springs,
Jacksonville,
Lake Alfred,
Leesburg,
Marianna,
New Smyrna,
Okeechobee,
Plant City,
River Junction,
St. Augustine,
Starke,
Titusville,
West Palm Beach,
Arran,
Bradentown,
Cedar Key,
Dade City,
Dunedin,
Enterprise Jct.
Fort Pierce,
High Springs,
Key West,
Lake Helen,
Live Oak,
Miami,
Noma,
Orlando,
Palatka,
St. Petersburg,
Sewalls Point,
Tallahassee,
Wauchula.

The equipment of the laboratory is in satisfactory condition and at present in a quantity sufficient to do about 10 daily samples. Later this will necessarily have to be increased.

PART IV

MISCELLANEOUS

Since the inception of the Bureau of Engineering on July 1st, a large amount of advice and information has been furnished to individuals, corporations, and institutions—advice which because of its varied character is classed as miscellaneous. Numerous communications have been received by this office requesting information concerning general and specific sanitary measures and laws.

RESIDENTIAL SEWAGE DISPOSAL

Designs for Plants

The installation construction, and costs pertaining to residential sewage disposal plants have received much attention and in consequence, plans have been prepared and forms compiled to serve any individual who requests such information. Already nearly a hundred such designs have been furnished to citizens' demands upon us.

PRIVIES

The construction and remodelling of privies in accordance with the State laws, Chapter 6895 (No. 89) and Chapter 6836 (No. 30) has been given no small amount of attention and consideration. In every city visited during the interim between July 1st and December 31st, 1916, personal investigations of privies and their construction have been conducted, for the purpose of ascertaining the extent to which the above laws were being observed and making subsequent recommendations to the honorable city councils for promulgating the significant corrections deemed advisable. When one considers the significant and extensive role played by the fly, in the furtherance and propagation of typhoid fever, dysentery and other intestinal diseases, then only, can the necessity for suitable fly-proof privies be impressed upon the citizens, improvements encouraged, and the wisdom of the above State laws be demonstrated. Numerous small towns have been exceptionally active in promoting the popular attention to the utter necessity of sanitary fly-proof privies, many having included municipal ordinances on their statute books to conform with the State laws. The city of Chipley has set an admirable example for many to follow along this line of sanitary endeavor.

School Hygiene

The problem of school hygiene is also one of importance being undertaken by the Bureau of Engineering. Rural and municipal schools should afford typical examples of sanitary teachings and with this in view the investigations and surveys of such institutions are being carried on. Already during the six months covered by this report, schools have been inspected at several places relative to toilets, heating, ventilation, lighting and proper orientation. These items are all of the greatest significance and if properly adjusted in our schools will eventually act as teaching models for the younger generations. In the rural schools the adequacy of fly-proof construction and proper locations of privies has demanded consideration as also have the sufficiency and purity of the local water supplies. From surveys already conducted our rural schools call for a great amount of attention to equip and correct them as examples of sanitation. Too little attention has been previously devoted to the orientation of schools in rural districts, to the proper wall tinting, to the seating arrangement and seat furniture, to the adequate heating and lastly to the best available, yet economical methods of ventilation. All these details demand earnest thought and study, in order to produce a child who will be physically efficient at the termination of its school career. The arrangement and installation of toilets in municipal schools has received some study and consequent recommendations have been issued to several such institutions, recommendations advising changes in present installations or remodeling along sanitary lines.

Collection and Disposal of Garbage

The collection and disposal of refuse—garbage, ashes and rubbish—has received the attention of the Bureau of Engineering also, and recommendations have been contributed to many towns relative to this important sanitary subject. The appropriate treatment of refuse at the household, its retention in a conformable retainer, its timely collection and sanitary disposal—all performed in an approved manner economically, efficiently, and with the creation of the slightest nuisance, are being encouraged and advised by this Bureau as integral parts of the sanitary surveys conducted.

The compilation of and advice upon sanitary, health ordinances affecting cleanliness are other functions performed by the Bureau and which to date has been taken advantage of by several municipalities seeking aid along these important lines.

Sanitary Abattoirs

A further work which the Bureau aspires to enlighten municipalities upon during the current year is the sanitation of abattoirs or slaughter houses for the proper butchering and preparation of meats, previous to sale. This is on an important line of endeavor and in this rapidly growing State necessitates sanitary protection of an engineering character.

State Plumbing Code

One of the most significant agitations commenced by the Bureau is the encouragement and promotion of a State Plumbing Code—a set of minimum rules and regulations by which all plumbing installations within this State can be regulated. The plan has met with the favor of plumbing inspectors, city engineers, and plumbers throughout the State and at this time is well matured towards definite legislation. Plumbing installations in the small communities of our State are inferior and need supervision. Plumbing is essentially the beginning of our municipal sewerage systems, therefore comes justly within the province of the sanitary engineer.

Above, the various miscellaneous duties confronting the engineering department have been enumerated—duties which aid and assist the individual as well as the city. Furthermore it demonstrates that the scope of work undertaken by the Bureau is not solely confined to city water supplies and sewerage systems. As the year progresses the extent of work will widen and sooner or later general municipal planning and ventilation will come in for consideration.

PART V

A sanitary survey is significant in that it informs the residents within any city or town of the physical conditions under which and in which they are residing, it places plainly before them the local needs, also certain recommendations for the correction and remedy of prevailing defects and advice relative to the definite formulation of an effective local program of activity. In other words, a municipal survey is an inventory of sanitary defects, the presence or existence of which might result in a future nuisance or epidemic.

During the six months period, July 1, 1916 to December 31, 1916, sanitary investigations of one or another nature were conducted in the following municipalities, some upon personal invitation, others upon the initiative of the Bureau.

In each instance such recommendations were made as deemed advisable.

Municipality	Character of Survey
Orlando	Defective water supply, sewage disposal
Lakeland	Water supply, sewage disposal, privies
Ocala	Water supply, sewerage, sewage disposal, privies, refuse collection and disposal. General sanitary measures
Miami	General nuisances
Live Oak	Water supply, sewerage, sewage disposal, privies, refuse collection and disposal, street cleaning, sewage wells, general sanitation
Monticello	Water supply, existing open sewers, proposed sewerage, privies, manure retention, general sanitation and cleanliness
Tallahassee	Water supply, sewerage, sewage disposal, sanitary ordinances, relative to plumbing, general sanitation
New Smyrna	Proposed water supply, source, general sanitary conditions
Chipley	Water supply, proposed sewerage and sewage disposal, refuse collection and disposal, general sanitation
Marianna	Water supply, sewerage, sewage disposal, school house sanitation, general measures
Perry	Water supply, sewerage, proposed sewage disposal, privies, ordinances and rules, general sanitation
Fort Meade	Water supply, sewerage, general
Wauchula	Water supply, sewerage, general. Refuse collection and disposal, general cleanliness
Punta Gorda	Water supply, sewerage, general measures, privies
Kissimmee	Water supply, sewerage, sewage disposal, privies, residential tanks, refuse collection and disposal
Phinney Point School	General rural school sanitation, water supply, privies, lighting, ventilating
Bowling Green	Privies, general sanitation
Quincy	Water supply, sewerage, sewage disposal, privies, general sanitation
Havana	Proposed water supply
Arcadia	Water supply, sewerage, privies, refuse collection and disposal
Winter Garden	General sanitation
Winter Park	General sanitary measures

RECOMMENDATIONS

After six months operation of the Bureau of Engineering, much study and consideration have resulted in the following recommendations to the Honorable State Board of Health:

(1) In order to impart to the Bureau of Engineering more prestige and make it a more valuable asset to the citizens of the State, certain legislation should be undertaken, this current year for the purpose of specifically outlining several definite duties. At present there is no law which states specifically that work of a sanitary engineering character cannot be executed without first receiving the official approval of the State Board of Health, further there is no law which states specifically that all plans for proposed work along sanitary engineering lines shall first be submitted to the sanitary engineer of the State Board of Health for official approval and advice, before final work can be instituted. In other States where such a Bureau of Engineering exists, such laws are provided for.

It is also necessary to effect a revision of the law now existing pertaining to sewage and drainage wells (Chapter 6443, No. 23) a revision to such an extent that the word "sewage" will replace the word "sewerage" which now appears printed in the statutes. Such wording as now appears may lead eventually to serious legal entanglements.

Chapter 5954, No. 85, Laws of Florida relative to pollution of waters, should be so amended as to grant the Engineering Bureau of the State Board of Health the necessary power to regulate the degree of permissibility to which streams or bodies of water may receive sewage or trades discharges.

(2) Owing to the increased work in the department, an additional equipment of the necessary field instruments with which to conduct essential field work will be required, such instruments as transits, levels, rods, etc.

(3) One of the most valuable undertakings the Bureau of Engineering is now contemplating will be the experimental work. For the proper and systematic conduct of such valuable experimental procedure, sufficient and ready funds must needs be provided for. During the present year it is planned to conduct a series of comprehensive and detailed experiments upon the new process of sewage treatment known as Activated Sludge, and that by such studies some good reliable information applicable to cities and towns in Florida can be secured. This process of sewage treatment has a great future in store for the South and the time is now ripe to institute scientific and systematic studies along proper lines to acquire significant data relative to economy of first cost and operation, and the applicability to any given instance, and determine the efficiency of operation under Florida conditions.

For the proper execution of such contemplated experiments, a fund of about $500.00 would be necessary in consideration of the material which the laboratory already possesses.

It is hoped that the Honorable Board will see the wisdom of this important work and will grant the fund asked for.

(4) At a later date additional assistance will be necessary in both the laboratory and office. Clerical work is increasing rapidly and soon the services of a full time stenographer will be necessary.

REPORT OF THE BUREAU OF VITAL STATISTICS

BY

F. L. WATKINS, M. D., *Statistician*

REPORT OF THE BUREAU OF VITAL STATISTICS

By F. L. WATKINS, M. D., Statistician

Dr. Joseph Y. Porter,
State Health Officer.

SIR:

Herewith is submitted a report showing the activities of the Bureau of Vital Statistics for the calendar year of 1916.

The writer assumed charge of the Bureau of Vital Statistics on March 1, 1916. Practically nothing had been done toward preparing to put the law into operation throughout the State, due to the long illness and death of Mr. W. Vorhees, former Statistician. From that time the regular work was conducted as it had formerly been until January 1, 1917. The interim was spent in districting the State, appointing Registrars, and the preparation of necessary blanks and forms. The Vital Statistics Law became effective at midnight, December 31, 1916.

It was doubtful as to whether registration was being conducted under the State law, or under local ordinances of the municipalities which were making reports. Because of this, many perplexing problems were presented throughout the year by Local Registrars. They reported many violations of the law in regard to reporting births and deaths, and asked what action should be taken. In each instance they were advised to let these matters rest and not in any way attempt to enforce the law or ordinances regarding the registration of either births or deaths. Therefore, had any attempt been made to enforce registration under either the law or local ordinances, and prosecution made under the provisions of the law, the defense would probably have been, had they cared to fight the case, that the local ordinance was repealed by the State law. Had any attempt been made to enforce the State law, it probably would have been met with the defense that the State law was not in force or effect until such time as all of its provisions had been complied with. A failure to convict in case of violation of the State law or local ordinance would have been disastrous to the future operation of the law throughout the State.

Immediately upon assuming charge of the work a definite program of procedure was outlined and the work started in building up an organization necessary to carry on the registration of births and deaths throughout the State of Florida. The work of organization was conducted, as follows:

ESTABLISHMENT OF PRIMARY DISTRICTS

Section 3 of the Vital Statistics Law provides, "That for the purposes of this Act the State shall be divided into Registration Districts, as follows: Each city and each incorporated town shall constitute a primary registration district;" and for that portion of each county outside of these municipalities "The State Registrar shall define and designate the boundaries of a sufficient number of rural registration districts, which districts he (State Registrar) may change, divide or combine from time to time as may be necessary to insure the convenience and completeness of Registration."

In establishing some rural unit of registration it would have been folly to have attempted to adopt any rural unit that did not have some boundary that was very well understood by the residents of the community. It seemed that we had only the choice between the County Commissioners' District and the Voting Precinct, and after deliberate consideration, the latter was chosen as the rural unit of registration for many reasons. It was thought that any person residing in a voting precinct would be able to give his place of voting even if he did not know the name or number of the voting precinct. It is doubtful if he would know in which County Commissioners' District he resided. The County Commissioners' District was considered entirely too large for a registration district, especially in many of the very large counties. As there are only five of these districts in a county, it would mean many miles of travel for the purpose of procuring a burial permit. It is not the intent of the law, or those operating it, to place any unnecessary hardships on any person in complying with its provisions. The adoption of the voting precinct as the rural unit of registration will not require much travel on the part of any person to procure a burial permit. This will in no way inconvenience a parent in reporting a birth when no physician or midwife was in attendance at the birth. If they do not desire to file the certificate in person they can mail it to the Local Registrar. In reporting a death it is usually necessary to personally file the certificate of death and procure a burial permit, as a burial permit is required before any disposition can be made of a dead body. In every instance we have attempted to make it as convenient as possible by appointing a Local Registrar who resided in the commercial center of the voting precinct. If this were not possible, the precinct was combined with another district which included a nearby town or city to which most of the people of that section of the country would go to purchase coffins or caskets, making it possible to secure the necessary burial or removal permit without any additional travel.

While there are many advantages in adopting the voting precinct as the rural unit of registration, it has a few disadvantages, one of which is that its boundary is subject to the gerrymandering of the County Commissioners, whereas, the County Commissioners' District is less subject to change. The United States Census enumerates the population of each county by voting precincts and not by the County Commissioners' District, and this is true of our State Census, making it possible, by having the Federal or State Census every five years, to keep in close touch with the population growth of each voting precinct. Thus enabling us to arrive at some definite idea as to the completeness of the registration of births and deaths in each of the voting precincts. The establishment of each registration district has been made with the view of securing the best results obtainable. It is well understood that the present arrangement of districts and location of Local Registrars may not be as convenient as it is possible to make it. When such conditions are brought to the attention of the Bureau, rearrangement of districts or appointment of Sub-Registrars will be made in order that the people may be conveniently served.

The first step necessary after deciding on the voting precinct as the rural unit of registration was to procure a map which would show the voting precincts in each county. Diligent inquiry and search revealed the fact that no such map was published, therefore, it was necessary for us to obtain this information directly from each county. In this we were greatly assisted by procuring a book of maps for each of the counties, except three created by recent Acts of the Legislature. These maps are published by The Florida Grower of Tampa, and on account of their interest in the registration of births and deaths, they were kind enough to make us a very liberal price on a sufficient number to enable us to send them out to County Officials in each of the counties. These maps show each section by number with the Range and Township, making it possible for anyone having the description of a voting precinct, as adopted by the County Commissioners, to trace on the map the boundary lines of each voting precinct. This was a distinct advantage to us in arranging our registration districts. It gave us a definite idea as to the best combination of primary districts for the convenience of the people, and at the same time we were able to judge distances in each precinct very accurately. It was possible after a time to procure this information, but much delay was occasioned by the first and second primaries as it was only possible in most counties to secure this information from the election officials of that county, who were busy in handling the work involved in conducting the two primaries. In many instances it was not possible for us to secure this information by correspondence. It could only be obtained by personally calling on some official. This was done by various employees of the Board. The voluminous work of some of the officials, and the indifference of others, caused an unnecessary delay in putting the law into operation.

APPOINTMENT OF LOCAL REGISTRARS

After deciding on the rural unit of registration, it was necessary to select a Local Registrar and a Deputy for each of the 776 Registration Districts established under the authority of Section 3, of the Act. To secure the Registrars and the information necessary for each district to permit the practice of strict economy in distributing the blanks and forms required a great amount of detailed correspondence. Much difficulty was encountered in securing Registrars, and at the time the law was put into state-wide operation (January 1, 1917), we had been able to secure only 653 of the 776 Registrars necessary for a complete working force. We met with but little success even with the assistance from the press of the State in announcing at different times the precincts in which appointments had not been made. Of those who were offered the appointment of Local Registrar, 299 refused to accept. In one county the refusals numbered 18. There was no county in which there was not one or more refusals to serve as Local Registrar. In some registration districts we had as many as five persons refusing to accept the appointment.

At the time of writing this report (January 30, 1917), Registrars have been appointed in 60 of the 123 Registration Districts not having Registrars on January 1, 1917. At this time there are 18 counties in which a Local Registrar has been appointed for each registration district. The number of registration districts in a county range from 4 in Franklin to 35 in DeSoto. Since the law was put into operation we have received the resignation of 40 Local Registrars, and have been able to secure a successor for 28 of those resigning.

PRINTED MATTER

The necessary blanks and forms for the registration of births and deaths were prepared during the time spent in dividing the State into registration districts, and securing Local Registrars. With the detailed information received from the Local Registrar in each district as to the number of physicians, midwives, undertakers, casket dealers, and sextons residing therein, it was possible to distribute these blanks in the most economical manner.

On December 26, 1916, a Parcel Post package of blanks and forms was sent to each of the 653 Registrars appointed, with instructions as to the number of each form of blanks to supply to the various persons on whom the law places responsibility of reporting births and deaths. A receipt was enclosed for each shipment made, and we feel confident that with two exceptions, the packages of supplies were received by the Local Registrars.

RECOMMENDATIONS

It is suggested that the Board adopt new Rules and Regulations governing the transportation of dead bodies, as the Rules now in force are in conflict with the Vital Statistics Law.

Full authority is given for the notification of cases of sickness under Section 24 of the Vital Statistics Law. Therefore, it is suggested that the Board adopt Rules naming the notifiable diseases and the manner in which reports should be made. It will be possible to handle such reports through the Bureau at a very small additional cost. The necessity for such reports handled in a systematic manner is very evident.

Provision should be made for the proper binding and indexing of all of the records of births and deaths filed with the Board prior to the creation of the Bureau. Many requests are made for information concerning births and deaths, but on account of the present condition of the records it is impossible, even after hours of search, to be thoroughly satisfied that such records are not on file.

MORTALITY 1916

The Mortality Report for 1916 is made from the returns received from 105 municipalities, which were registering deaths under local ordinances. The Mortality Report for 1915 represented the returns from the same cities and towns. The area reporting embraced about 38 per cent of the total population of the State.

The following table shows the number of deaths and the death rates from all causes and certain diseases and causes for the year 1916 as compared with that for the year 1915:

THE NUMBER OF DEATHS AND DEATH RATES PER 100,000 POPULATION FOR MUNICIPALITIES REPORTING DEATHS FOR THE YEARS 1915 AND 1916

Cause of Death	Number of Deaths						Death Rate per 100,000 population					
	Total		White		Negro		Total		White		Negro	
	1916	1915	1916	1915	1916	1915	1916	1915	1916	1915	1916	1915
ALL CAUSES	5,344	5,223	3,039	2,839	2,305	2,384	1,474.9	1,500.0	1,348.2	1,310.0	1,682.5	1,800.0
Typhoid Fever	91	101	45	61	46	40	25.1	29.0	20.0	28.2	33.6	30.3
Malaria	48	60	26	26	22	34	13.2	17.2	11.5	12.2	16.0	25.7
Smallpox	..	..	..	..	..	..	....	....	....	....	....	....
Measles	..	9	..	9	..	..	....	2.6	....	4.2	....	....
Scarlet Fever	3	..	2	..	1	..	.8	....	.9	....	.7	....
Whooping Cough	4	16	1	10	3	6	1.1	4.6	.4	4.6	2.2	4.5
Diphtheria and Croup	25	52	20	39	5	13	6.9	14.9	8.9	18.1	3.6	9.8
Influenza	66	77	47	56	19	21	18.2	22.1	20.8	25.9	13.9	15.9
Pellagra	82	143	30	41	52	102	22.6	41.1	13.3	19.0	37.9	77.2
Pulmonary Tuberculosis	554	535	211	195	343	340	152.9	153.7	93.6	90.1	250.3	257.4
All Forms Tuberculosis	599	585	235	222	364	363	165.3	168.1	104.3	102.8	265.6	274.8
Syphilis	94	65	23	15	71	50	25.9	18.7	10.2	6.9	51.8	37.9
Cancer	214	192	173	143	41	49	59.1	55.2	76.7	66.2	29.9	37.1
Heart Disease	294	332	185	201	109	131	81.1	95.4	82.1	93.1	79.5	99.2
Bronchopneumonia	68	74	37	45	31	29	18.8	21.3	16.4	20.8	22.6	22.0
Lobar Pneumonia	169	184	80	102	89	82	46.6	52.9	35.5	47.2	65.0	62.1
Diarrhoea and Enteritis (Under 2 years)	326	221	222	137	104	84	90.0	63.5	98.5	63.4	75.8	63.6
Bright's Disease	428	375	257	232	171	143	118.1	107.7	114.0	107.4	124.8	108.3
Puerperal State	86	92	49	51	37	41	23.7	26.4	21.7	23.6	27.0	31.0
Suicides	39	45	32	37	7	8	10.8	12.9	14.2	17.1	5.1	6.1
Homicides	101	91	32	19	69	72	27.9	26.1	14.2	8.8	50.4	54.5

ALL CAUSES

For the year 1916, 5,344 deaths were reported as compared with 5,223 for the year 1915. The increase in the population of the area reporting was sufficient to give a lower death rate for 1916 than for 1915 in spite of the fact that there were 111 more deaths reported during the latter year. The crude death rates for the years 1916 and 1915 were respectively 14.7 and 15.0 per 1,000 population. Apparently the health conditions of the area reporting was much better during 1916 than for the previous year. The death rates for each of the preventable diseases showed a decrease, except for syphilis and diarrhoea and enteritis (under 2 years) and cancer. Scarlet fever was reported as the cause of three deaths during 1916, whereas, no deaths from this cause were reported during 1915. Rabies was reported as the cause of two deaths, one in Jacksonville and the other in Tallahassee. Both of them were white girls four years of age. Leprosy was reported from Key West as the cause of death of a white female. Of the 5,344 deaths reported, 3,039 occurred among the white and 2,305 among negroes. The white death rate from all causes for the year was 13.5 as compared with 13.1 per 1,000 population for the year 1915. There were fewer negro deaths reported during 1916 than for the preceding year. The number of deaths were respectively 2,305 and 2,384 which was responsible for a death rate of 16.8 for 1916 and 18.0 for 1915.

TYPHOID FEVER

During 1916 there were 91 deaths reported as due to typhoid fever as compared with 101 for the year 1915. The death rate per 100,000 population declined from 29.0 to 25.1. The white death rate for typhoid showed a reduction, and the negro typhoid rate increased from 30.3 in 1915 to 33.6. The white typhoid death rate for 1916 was 20.0 as compared with a rate of 28.2 for 1915.

MALARIA

The death rate for malaria showed a decline of more than 23 per cent in 1916 as compared with the year 1915. In 1916 there were 48 deaths reported from this cause as compared with 60 for the year 1915. This was responsible for a death rate of 13.2 per 100,000 population for 1916 and a rate of 17.2 for 1915. Among the white population 26 deaths were reported as malaria, this number of deaths for both years with the increased population made a slight reduction in the death rate. The respective death rates for 1916 and 1915 were 11.5 and 12.2. Malaria was responsible for 22 deaths during 1916 as compared with 34 for the previous year, making the respective death rates of 16.0 and 25.7 per 100,000 population.

SMALLPOX

No deaths from smallpox were reported for either 1916 or 1915.

MEASLES

No deaths were reported as due to measles during 1916. There were 9 deaths from this cause for the year 1915, all of which were white.

SCARLET FEVER

Scarlet fever caused three deaths, two of which were white and one negro. No deaths were reported from this cause during 1915.

WHOOPING COUGH

Whooping cough caused 4 deaths during 1916, which was responsible for a death rate of 1.1 per 100,000 population. During the year 1915 there were 16 deaths due to whooping cough, with a death rate of 4.6. Only one white death was due to whooping cough during 1916 as compared with 10 for the previous year, making the respective death rates of 0.4 and 4.6. Whooping cough caused 3 deaths in 1916 and 6 during 1915. This would make a death rate of 2.2 for 1916 and 4.5 for 1915.

DIPHTHERIA AND CROUP

There was a reduction of more than 50 per cent in the death rate of diphtheria and croup in 1916 over the year 1915. Diphtheria caused 25 deaths in 1916 and 52 in 1915, making a death rate of 6.9 for 1916 and 14.9 for 1915. The 20 white deaths due to diphtheria was responsible for a death rate of 8.9 and 39 deaths during 1915 made a rate of 18.1. The number of negro deaths for 1916 was 5 as compared with 13 for the previous year. The respective negro death rates being 3.6 and 9.8 for diphtheria and croup.

INFLUENZA

Influenza caused 66 deaths, of this number 47 were white and 19 negroes. This would produce a death rate of 18.2, white rate of 20.8 and negro rate of 13.9 per 100,000 population. The respective death rates for 1915 were: 22.1, 25.9 and 15.9.

PELLAGRA

The number of pellagra deaths and the death rate showed a decided reduction in 1916 as compared with the previous year. Only 82 deaths were reported for this year as due to pellagra as compared with 143 for 1915. This gives a death rate of 22.6 for 1916 and 41.1 for 1915. The white deaths dropped from 41 in 1915 to 30 in 1916, and the negro deaths declined from 102 in 1915 to 52 in 1916. The white death rate for 1916 and 1915 was 13.3 and 19.0 per 100,000 population. The negro death rates for 1916 and 1915 were 77.2 and 37.9.

TUBERCULOSIS

Tuberculosis was the cause of 599 deaths during the year, of this number 554 were pulmonary. The death rate for all forms of tuberculosis was 165.3 per 100,000 population, this was slightly lower than the rate of 168.1 for the year 1915. The death rate for pulmonary tuberculosis, like all forms, showed a slight reduction in the death rate. The rate being 152.9 for 1916 as compared with a rate of 153.7 for 1915. Among the whites 235 deaths were caused by all forms of tuberculosis and of this number 211 were pulmonary. The death rate for all forms of tuberculosis among the whites was 104.5, which was slightly higher than the rate of 102.8 for the previous year. The tuberculosis death rate among negroes declined slightly for all forms and pulmonary. The negro rate for all forms of tuberculosis was 265.6 for 1916 and 274.8 for pulmonary. The pulmonary tuberculosis death rate of 250.3 for 1916 was lower than that of 257.4 for 1915.

SYPHILIS

The death rate for syphilis showed a decided increase. This was probably due to more complete reports for the area reporting deaths; laboratory facilities making it possible to make a positive diagnosis; and it is also, probable that the medical profession does not have the hesitancy in making their reports as has been the case in the past. The death rate for syphilis for 1916 was 25.9 as compared with a rate of 18.7 for the year 1915. The increase in the syphilis death rate was about the same among the whites and negroes. The syphilis death rate for whites in 1916 was 10.2 and for 1915 it was 6.9. The negro syphilis death rate of 51.8 for 1916 was five times that of the white rate for the same year. The negro syphilis death rate for 1915 was 37.9 per 100,000 population.

CANCER

The causes of death included under cancer includes all deaths compiled under International Titles, Numbers 39 to 45 inclusive. Cancer was reported as the cause of 214 deaths in 1916 producing a death rate of 59.1 per 100,000 population. The deaths from this cause in 1915 numbered 192, with a death rate of 55.2. Both the number of deaths and the death rate from cancer among whites in 1916 showed a decided increase over the year 1915. The number of deaths in 1916 was 184 and 143 in 1915, making the respective death rates of 76.6 and 66.2. The number of negro deaths from cancer declined from 49 in 1915 to 30 in 1916. The death rate from cancer among the negroes in 1915 was 37.1 and declined to 29.9 in 1916.

PNEUMONIA

The term pneumonia included broncho-pneumonia, lobar pneumonia, and pneumonia unqualified. Of the 237 deaths reported as due to pneumonia 68 were broncho and 169 lobar. During the year 1915 there were 258 deaths reported from pneumonia. The death rate declined from 74.2 in 1915 to 65.4 in 1916. The reduction in the pneumonia death rate was due to fewer white deaths, the number of deaths in 1915 was 147 and 117 in 1916, making the white rate 68.0 for 1915 and 51.9 for 1916. The negro deaths from pneumonia in 1916 were 120 and 111 for the year 1915.

DIARRHOEA AND ENTERITIS

(Under Two Years)

Diarrhoea and enteritis showed a decided increase in both the number of deaths and the death rate in 1916 as compared with the year 1915. Of the 326 deaths assigned to this title 222 were whites and 104 were negroes. The 326 deaths from diarrhoea and enteritis in 1916 was responsible for a death rate of 90.0 per 100,000 population, whereas, the 221 deaths during the previous year made a death rate of 63.5. This increase was due to the increase in the deaths among both the whites and negroes, the white rate for this cause in 1916 was 98.5 as compared with a rate of 63.4 in 1915. The negro death rate for diarrhoea and enteritis for 1916 was 75.8 as compared with a rate of 63.6 for 1915.

PUERPERAL STATE

It is real gratifying to note that in spite of the increased number of deaths reported from the rural section of the area reporting deaths for the year 1916, that the death rate from this cause shows a nice decrease over that of the preceding year. The number of deaths reported for the year 1916 was 86 as compared with 92 for 1915, this makes a respective death rate for the two years of 23.7 and 26.4 per 100,000 population. The number of white deaths from this cause for 1916 was 49 as compared with 51 for 1915 and the negro deaths numbered 37 for 1916 as compared with 41 for the preceding year. The respective white death rates being 21.7 and 23.6; and the negro rates were 27.0 and 31.0.

SUICIDES

The number of suicides in 1916 was 39, in 1915 there were 45 deaths due to this cause. The death rate declined from 12.9 in 1915 to 10.8 in 1916. Of the 39 suicides, 32 of them were white and 7 negro. The white rate of 14.2 was almost three times that of 5.1, the negro rate.

HOMICIDES

During the year 1916 there were 101 deaths due to homicides as compared with 91 for the previous year. This was responsible for an increase of the death rate for this cause, from 26.1 in 1915 to 27.9 in 1916. Homicide was the cause of death of 32 whites and 69 negroes. The white death rate for this cause increased from 8.8 in 1915 to 14.2 in 1916; the negro death rate for homicide declined from 54.5 in 1915 to 50.4 in 1916. The slight increase in the death rate from this cause was due to the increase in the number of white deaths from this cause.

REPORT OF THE BUREAU OF VETERINARY SCIENCE

CHAS. F. DAWSON, M.D., D.V.S.
Veterinarian and Chief of Bureau

REPORT OF THE BUREAU OF VETERINARY SCIENCE

JACKSONVILLE, FLORIDA, January 1st, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Florida.

DEAR DOCTOR:

I have the honor to present the annual report of the Bureau of Veterinary Science for 1916, which consists of the reports of the Veterinarian, the First Assistant Veterinarian and the Second Assistant Veterinarian.

These are respectfully presented for publication as a part of the annual report of the State Health Officer, for 1916.

In presenting this report an opportunity is given me to thank you, once more, for the many evidences of a lively interest and effective cooperation which have made the work of this Bureau of great value to the live stock interests of the State.

Yours very respectfully,
CHAS. F. DAWSON, M. D., D. V. S.,
Veterinarian and Chief of Bureau.

Organization of the Bureau of Veterinary Science

Charles F. Dawson	Veterinarian	Jacksonville
W. A. Munsell	1st Asst. Veterinarian	Green Cove Springs
J. W. DeMilly	2nd Asst. Veterinarian	Tallahassee
Hazel I. Williams	Clerk and Stenographer	Jacksonville

State Veterinary Inspectors

F. H. Armstrong	Pensacola
A. R. Blott	Lake City
C. R. Couch	Bartow
Geo. S. Davis	Palatka
A. D. Galbraith	Orlando
W. E. Grace	Jacksonville
W. H. Harrison (M. D.)	Cottondale
E. B. Howell (M. D.)	Micanopy
J. K. Jones	Gainesville
W. P. Link	Tampa
T. J. Mahaffy	Jacksonville
Geo. Masgana	Jacksonville
A. R. Neilson	Melbourne
Guy M. Parrish	Ocala
Fred W. Porter	Tampa
S. W. Reed	Pine Castle
Major Schofield	Miami
H. S. Sowers	Cocoa
H. H. Spencer	Jacksonville
W. J. Tanner	St. Petersburg
E. G. VansAgnew	Kissimmee
W. E. Van Landingham (M. D.)	Fort Pierce

County Farm Demonstration Agent. Salaries Paid by Federal and County Governments, Giving Free Services in Administration Hog Cholera Serum

COUNTY	AGENT	ADDRESS
Alachua	W. E. Brown	Gainesville
Baker		
Bay		
Bradford		
Brevard	A. R. Neilson	Melbourne
Broward		
Calhoun	J. E. Yon	Blountstown
Citrus	W. E. Allen	Lecanto
Clay	W. T. Nettles	Green Cove Springs
Columbia		
Dade		
DeSoto		
Duval	W. L. Watson	Jacksonville
Escambia		
Franklin		
Gadsden	M. N. Smith	River Junction
Hamilton		
Hernando	J. T. Daniel	Brooksville
Hillsborough	R. T. Kelly	Plant City
Holmes		
Jackson	S. W. Hiatt	Marianna
Jefferson	M. C. Gardner	Monticello
Lafayette	D. C. Geiger	Mayo
Lake	Wm. Gomme	Tavares
Lee	J. M. Boring	Ft. Myers
Leon (white)	D. P. Coffin	Tallahassee
Leon (colored)	Frank Robinson	Tallahassee
Levy		
Liberty	A. W. Turner	Bristol
Madison	Colin D. Gunn	Madison
Manatee		
Marion	R. W. Blacklock	Ocala
Monroe		
Nassau	James Shaw	Hilliard
Orange	C. H. Baker	Orlando
Osceola	B. E. Evans	Kissimmee
Palm Beach	R. N. Wilson	West Palm Beach
Pasco	R. T. Weaver	Dade City
Pinellas		
Polk	A. A. Lewis	Kathleen
Putnam	L. Cantrell	Palatka
Santa Rosa	E. M. Manning	Milton
Seminole	C. M. Berry	Sanford
St. Johns	H. C. Lawton	Hastings
St. Lucie	Alfred Warren	Ft. Pierce
Sumter		
Suwannee	O. W. Caswell	Live Oak
Taylor	R. I. Matthews	Perry
Volusia	R. E. Lenfest	DeLand
Wakulla	W. T. Green	Arran
Walton		
Washington	D. G. McQuagge	Chipley

Authorized Veterinary Federal Inspectors Engaged in Tick Eradication, Address 1208-9 Heard Building, Jacksonville

E. M. Nighbert, In Charge	Jacksonville
W. G. Blake	Leesburg
H. F. Kern	Key West
J. V. Knapp	Pensacola
H. A. Smith	Jacksonville
A. C. Stever	Jacksonville
H. A. Taggart	Jacksonville

State and County Live Stock Inspectors in Tick Eradication

J. J. Hubel	Lemon City	Dade County (State)
George Meade	Cottage Hill	Escambia County (County)
M. G. Watson	Pensacola	Escambia County (State)
S. P. Kirkland	Altoona	Lake County (County)
J. R. Cunningham	Leesburg	Lake County (State)
F. G. Douglass	Mascott	Lake County (County)
Hilton Curry	Key West	Monroe County (County)
Putnam Jernigan	Milton	Santa Rosa County (County)
R. W. Storrs	DeFuniak Springs	Walton County (State)

Hog Cholera

As in previous years, although not to so great an extent, anti-hog cholera serum was distributed, free, to hog owners. The experience of former years brought the Board to a realization that the expense of distribution of free serum was ever on the increase, and was keeping pace with the rapid increase in hog production. It, therefore, seemed wise and necessary for the Board to limit the amount of money to be expended on hogs, for the year 1916, to ten thousand dollars. This appropriation became exhausted in August, since which time, no serum has been distributed.

It may be of interest, here to restate the amounts of money expended by the Board since free distribution was ordered, by legislative act. In 1911, $2,500.00; in 1912, $12,000.00; in 1913, $8,000.00; in 1914, $21,000.00; in 1915, $20,000.00; and in 1916 $10,000.00, were the amounts spent. In all, we find the Board has, in six years, spent $73,500.00 for anti-hog-cholera serum. Other additional expenses, not enumerated, would, no doubt, bring the total amount up to $75,000.00.

The use of hog-cholera virus simultaneously with the serum has increased to a considerable extent, during the year, with only a few mishaps, which could, in every case, be traced to improper dosage, due to a desire to make the serum "run," in cases where the amount of serum was insufficient. These improper administrations cost the owner heavily, in every case, and is an argument for great care in administering virus. That more success is attained and the employment of virus is becoming more general is due to the increase in experience and confidence in the operators. The view is held, by practical hog breeders that the occasional sickness or loss of a hog, from virus, is more than offset by the knowledge that the drove has been made immune to cholera. While it may be possible to infect a premises by the use of virus, no anxiety need exist when the owner knows his hogs can be protected from infection. The plan of treating every hog regularly by the serum-virus method, if faithfully carried out, will put the owner in a position to ignore the existence of cholera infection on his own farm, or that of his neighbor.

Following is a statistical table of serum distributed in 1916:

Hog Cholera Serum Statistics

County	C. C. Serum Distributed	Estimated No. Hogs Treated	Estimated Wt. Hogs Treated
Alachua	137,600 c.c.	6,552	399,672 lbs.
Baker	....	.....	....
Bay	8,250 c.c.	392	23,912 lbs.
Bradford	96,800 c.c.	4,609	281,349 lbs.
Brevard	....	.....	....
Broward	2,700 c.c.	128	7,808 lbs.
Calhoun	41,650 c.c.	1,983	120,963 lbs.
Citrus	24,850 c.c.	1,193	72,223 lbs.
Clay	29,800 c.c.	1,371	88,631 lbs.
Columbia	13,650 c.c.	650	39,650 lbs.
Dade	650 c.c.	30	1,891 lbs.
DeSoto	43,000 c.c.	2,047	124,867 lbs.
Duval	16,550 c.c.	788	48,068 lbs.
Escambia	28,900 c.c.	1,376	83,936 lbs.
Franklin	1,000 c.c.	47	2,867 lbs.
Gadsden	55,150 c.c.	2,506	152,866 lbs.
Hamilton	24,950 c.c.	1,134	69,174 lbs.
Hernando	36,350 c.c.	1,652	70,772 lbs.
Hillsborough	59,800 c.c.	2,718	165,798 lbs.
Holmes	77,800 c.c.	3,536	215,696 lbs.
Jackson	115,100 c.c.	5,231	319,091 lbs.
Jefferson	52,050 c.c.	2,365	144,265 lbs.
Lafayette	7,300 c.c.	331	20,191 lbs.
Lake	8,600 c.c.	390	23,790 lbs.
Lee	1,000 c.c.	45	2,745 lbs.
Leon	20,800 c.c.	945	57,645 lbs.
Levy	66,150 c.c.	3,006	183,366 lbs.
Liberty	20,900 c.c.	950	57,950 lbs.
Madison	43,400 c.c.	1,972	111,292 lbs.
Manatee	1,750 c.c.	79	4,819 lbs.
Marion	92,400 c.c.	4,200	256,200 lbs.
Monroe	......	.....	....
Nassau	1,150 c.c.	52	3,172 lbs.
Orange	4,350 c.c.	197	12,017 lbs.
Osceola	650 c.c.	29	1,769 lbs.
Palm Beach	1,000 c.c.	45	2,745 lbs.
Pasco	24,850 c.c.	1,129	68,869 lbs.
Pinellas	1,000 c.c.	45	2,745 lbs.
Polk	26,150 c.c.	1,188	72,468 lbs.
Putnam	15,950 c.c.	725	44,225 lbs.
Santa Rosa	21,100 c.c.	959	58,499 lbs.

Seminole	1,000 c.c.	45	2,745 lbs.
St. Johns	2,550 c.c.	115	7,015 lbs.
St. Lucie	......	.....	....
Sumter	15,500 c.c.	704	43,244 lbs.
Suwannee	44,500 c.c.	2,022	123,342 lbs.
Taylor	.....	.....	....
Volusia	8,000 c.c.	362	22,082 lbs.
Wakulla	2,000 c.c.	90	5,490 lbs.
Walton	47,350 c.c.	2,152	131,272 lbs.
Washington	46,810 c.c.	2,127	129,747 lbs.
	——— c.c.	———	——— lbs.
Total.........	1,392,810 c.c.	64,202	3,877,943 lbs.

16,350 c.c. Serum sold at cost.

As hog cholera serum is supplied only by application on standard application blank of the State Board of Health, giving number of hogs to be treated, etc., and as all serum is labeled for immediate use, this number is believed to be fairly accurate as representing hogs treated during 1916.

Tick Eradication

Two counties, Broward and Dade, and that part of Palm Beach County south and west of the Hillsborough Drainage Canal were declared free of the cattle tick by the secretary of Agriculture, early in 1916.

On October 1st, 1916, the Secretary of Agriculture, in recognition of a wide-spread interest in the subject of tick-eradication, and upon special request, established a Federal office in Jacksonville, to cooperate with the State and Counties in the eradication of the cattle tick. At present several counties have actively taken up the preliminary work of vat construction, and one of them, Monroe, is dipping all its cattle systematically, under Federal supervision. Another, Escambia, is about ready to begin systematic dipping. Three others, Santa Rosa, Walton and Lake Counties are engaged in preliminary work and vat construction, and will, no doubt, push the work to a rapid conclusion. So that, it is possible that six or more counties will be at work actively eradicating the cattle tick during the coming year.

Upon the establishment of a Federal tick-eradication office in Jacksonville, and the installation, by this Board, of a large dipping vat and non-infectious feeding pens, it is possible, now, to ship cattle under Federal certificate of dipping, for cattle ticks, to any part of the United States, direct from Jacksonville, without further delay *en route,* to destination.

Dipping vat construction has been general in most of the counties of the State during the year. While our efforts to get a complete list of vats now existing were not entirely successful it will be seen from the following list that there is good reason for being greatly encouraged as to the outlook for the tick eradication movement, which had its inception, in the year 1912, through the pioneer work done under the auspices of the State Board of Health.

Dipping Vats

COUNTY	TOWN	OWNER
Alachua	Gainesville	W. E. Gainesville
Alachua	Gainesville	A. L. Jackson
Alachua	Gainesville	Kincaid Bros.
Alachua	Gainesville	University of Florida
Alachua	Arredonda	John H. Halley
Alachua	Clyatts	Mr. Harrison
Alachua	Daysville	Bock & McDonald
Alachua	Rochelle	Pfeifer Bros.
Alachua	Rochelle	A. Bruce Zetrouer
Alachua	Rochelle	A. W. Zetrouer
Alachua	Wacahoota	Sheriff Ramsey
Baker	Macclenny	C. F. Barber
Baker	Baxter	C. F. Barber
Bradford	Dukes	B. E. Brown
Bradford	Lake Butler	P. M. Padgett
Bradford	Lake Butler	B. E. Brown
Bradford	Lake Butler	J. W. Townsend and P. M. Padgett
Bradford	Raiford	State Prison Farms
Clay	Green Cove Springs	Southern Cattle Feeding Co.
Clay	Highland	F. D. Long
Duval	Jacksonville	Interstate Stock Yards
Duval	Jacksonville	Jacksonville Union Stock Yards
Duval	Jacksonville	Riverside Dairy Co.
Duval	Jacksonville	City Prison Farms
Duval	South Jacksonville	Skinner Bros.
Duval	Baldwin	J. G. Boyd
Duval	Youkon	Sam Spencer
DeSoto	Arcadia	Parker Bros.
DeSoto	Indian Prairie	Freeman Berge
DeSoto	Lily	W. H. Platt
DeSoto	Nocatee	King Lumber & Manufacturing Company
DeSoto	Ono	R. L. Cowart
DeSoto	Ono	M. V. Homeyer
DeSoto	Wauchula	Bob Crews
Escambia	Barth	E. Hicks
Escambia	Cantonment	J. D. Anderson
Escambia	Cottage Hill	W. C. Barrineau
Escambia	Muscogee	P. K. Yonge
Escambia	G. F. & A. Yds.	G. F. & A. Ry. Co.
Escambia	Pensacola	A. F. Adkinson
Escambia	Pensacola	T. Leonard
Escambia	Gonzalez	J. Bradley
Escambia	Gonzalez	W. L. Hardy
Escambia	Cottage Hill	J. McDonald
Escambia	Quintette	H. Barrineau

COUNTY	TOWN	OWNER
Escambia	Muscogee	H. Fillingin
Escambia	Quintette	E. Morgan
Escambia	Pine Barren	W. Johnson
Escambia	Molino	City Vat
Escambia	Barth	City Vat
Escambia	Vogie Station	Chas. Dixon
Escambia	McDavid	C. Bonifay
Escambia	McDavid	J. Bratcher
Escambia	Bluff Springs	M. McFarland
Escambia	Century	J. Schaver
Escambia	McDavid	M. O. Baggett
Escambia	Century	Jim Renfrow
Escambia	Century	Jas. Rigsby
Escambia	McDavid	John Miniett
Escambia	Vogie Station	Joe Bruton
Escambia	Atmore, Ala.	E. Ward
Escambia	Atmore, Ala.	H. Graham
Gadsden	Chattahoochee	State Insane Asylum
Gadsden	Ocklocknee	E. M. Davis
Gadsden	Ocklocknee	Ocklocknee Brick Co.
Gadsden	Hardaway	B. H. Hardaway
Gadsden	Greensboro	Town of Greensboro
Gadsden	Gretna	S. V. Hough
Hamilton	Jennings	T. A. Jennings
Hamilton	Jasper	Roy Adams
Hamilton	Jasper	J. A. Harrison
Hamilton	Winn	H. S. McCallum
Hillsborough	Tampa	Aug. Van Epoel
Hillsborough	Hopewell	Community Vat
Hillsborough	Knights	D. L. Crunn
Hillsborough	Plant City	I. Hop Wilder
Holmes	Bonifay	J. McLachlin
Holmes	Bonifay	W. A. Sessoms
Holmes	Noma	Hamp Morris
Holmes	Bonifay	Community
Holmes	Ponce de Leon	Dan Hughes
Jackson	Marianna	Thos. Lambe
Jackson	Marianna	Mr. Deekel
Jackson	Grand Ridge	W. J. Singletary
Jackson	Sneads	E. N. Lewis
Jackson	Sneads	J. W. Gibson
Jackson	Sneads	Mr. Parker
Jackson	Graceville	Graceville Dipping Vat Co.
Jackson	Graceville	J. D. Kirkland
Jackson	Graceville	S. I. Miller
Jackson	Graceville	Ball Bros.
Jackson	Campbellton	W. L. McKinley
Jackson	Campbellton	W. G. Bryan
Jackson	Cottondale	J. W. Hinson
Jackson	Greenwood	W. F. Chambliss
Lake	Fruitland Park	J. I. Lloyd
Lake	Tavares	(Unknown)
Lake	Umatilla	Griffin Bros.
Lake	Victoria	(Unknown)
Lake	Sorrento	Riddle Bros.
Lake	Tavares	J. P. McCullum
Lake	Leesburg	W. R. Matthews
Leon	Tallahassee	W. M. Johnson
Leon	Tallahassee	Cattle Club
Leon	Tallahassee	A. & M. College
Leon	Tallahassee	John Aldrich
Leon	Tallahassee	O. C. Stucky
Leon	Miccosukee	Redolph Harold
Liberty	Sumatra	Carr Bros.
Liberty	Telogia	W. C. Halley
Liberty	Telogia	W. H. Stoutamire
Liberty	Wilma	A. D. Carr
Manatee	Laurel	A. E. Blackburn
Marion	Citra	J. L. Williams
Marion	Evinston	P. K. Richardson
Marion	Irvine	L. K. Edwards
Marion	McIntosh	S. H. Gaitskill
Marion	Ocala	Jack Camp
Marion	Ocala	C. P. Howell
Marion	Ocala	Edwards Bros.
Marion	Ocala	S. T. Sistrunk
Marion	Martel	Walter Ray
Marion	Lowell	J. M. Meffert
Marion	Reddick	Millwood Farms
Marion	Evinston	Woods-Richardson
Marion	Lowell	Wetumpka Fruit Co.
Monroe	Key West	R. Adams
Nassau	Baldwin (near)	C. F. Barber
Nassau	Crawford	Mr. Keene
Nassau	Baldwin (near)	H. R. Pringle
Nassau	Fernandina	Steve Chadwick
Nassau	Crendall	Davis Bros.
Osceola	Kissimmee	Senator Donegan
Osceola	Cane Creek	(Unknown)
Osceola	East Lake	(Unknown)
Osceola	Kissimmee	E. J. Lesley or C. A. Carson
Osceola	Southport	Henry T. Bass
Orange	Tangerine	Sam Sadler
Orange	Lake Pickett	James Bros.
Orange	Pine Castle	J. P. A. Hermon
Orange	Zellwood	Wm. Edwards
Pasco	Dade City	Community Vat (Kirby Williams)
Pasco	Trilby	(Unknown)
Putnam	Hillister	C. L. Whitehead
Putnam	Rodman	Rodman Lumber Co.
Santa Rosa	Wallace	(Unknown)
Santa Rosa	Cora	(Unknown)
Seminole	Chuluota	J. W. Nixon, M. D.
Seminole	Geneva	J. C. Cameron
Seminole	Sanford	Tosohatchee Ranch Co., (Alfred Foster, Sec'y)
Seminole	Sanford	Tosohatchee Ranch Co.
St. Johns	Hastings	F. E. Bugbee
St. Johns	St. Augustine	Littlefield-Erwin Co.
Suwannee	Branford	W. H. Foxworth
Suwannee	Wilmarth	Frank Drew
Taylor	Perry	(Unknown)
Volusia	Barberville	Wm. Revels
Volusia	Emporia	Floyd P. Felt
Volusia	Pierson	F. D. Harper
Walton	Florala, Ala.	W. H. Hughes
Walton	DeFuniak Springs	Walton Land & Timber Co.
Walton	DeFuniak Springs	Miller & McSween

Walton	DeFuniak Springs	R. W. Storrs
Washington	Chipley	Two vats

Total number of dipping vats.....................................164

Self-Boiled Cattle Dip

The so-called Self-boiled Dip is so simple to make that it is recommended above the old dip. Its name implies that it boils itself; but such is not the case, because of the impossibility of getting pure chemicals at low prices. The formulæ of and directions for making are as follows: Formula No. 1, the stronger, or 10-lb. dip, is required for all interstate shipments. Formula No. 2, the weaker, or 8-lb. dip, is for ordinary dipping.

Formula No. 1		Formula No. 2	
Arsenic	30 pounds	Arsenic	24 pounds
Sal soda	30 pounds	Sal soda	24 pounds
Caustic soda	12-lb. can	Caustic Soda	10-lb. can
Caustic soda	2¼-lb. can	Caustic soda	2¼-lb. can
Pine tar	3 gallons	Pine tar	3 gallons

Proceed as follows:

Empty the 12-lb. can, or 10-lb. can of caustic soda, according to the formula selected, into a fifteen-gallon iron pot or galvanized wash tub, add three gallons of water, and stir. Add, a pound or two at the time, the arsenic, stirring all the time to dissolve it. When all the arsenic is dissolved, allow to cool some and then add, in like manner, the thirty pounds, or the twenty-four pounds of sal soda. A gallon of water added at this time will cause the arsenic and soda to dissolve more readily, and you can help matters by applying heat. When the solution is complete add enough water to bring the total up to 15 gallons, and you have your concentrate WHICH IS TO BE DILUTED 100 TIMES, and is enough to fill a 1,500 gallon vat.

To make tar stock:

Place the 2½-pound can of caustic soda in a 5 gallon pot, and add 3 quarts of water. Stir, and when cooled down some, add the three gallons of tar, and stir thoroughly. This makes the tar alkaline and water-soluble. Test by washing some off the hand.

Before beginning operations the large iron pot should be marked at a point where it holds just 15 gallons. Another method is to use a stick notched at the 15-gallon mark.

In filling the vat, add 3 or 4 times as much water to the tar and empty it into vat when same is about three-quarters full of water, and mix. Add the arsenic solution, after vat is filled with water, and mix.

Time can be saved by making the tar stock first, or by starting it first, as it takes a long time to get it out of the can, in cool weather. Make a vent hole in can so the tar can run out.

When it becomes necessary to add more dip to the vat, use 3 pints of tar to each 100 gallons of dip required to be added to the vat.

CAUTION

Don't forget that Arsenic is a highly poisonous substance. Don't dip cattle when heated; nor within seven days, the second time. Dip once every two weeks, to eradicate, and once a month to control ticks.

Assuming the vat is built according to government specifications it holds, at the 5 foot, 3 inch water line, about 1,500 gallons of dip. If built according to other specifications we should be informed *how much your vat holds at the 5 foot, 3 inch water line.*

Fill the vat with water to the 5 foot, 3 inch depth, and stir thoroughly by means of a board, standing at the entrance end; or mixing may be accomplished by passing a few cattle through that have not been dipped within seven days. Then send a two-ounce sample of the dip, by mail, and a prompt report of the strength, and the amount of concentrate to be added will be made.

How to Determine the Capacity of a Vat

(1) Reduce all dimensions to the same denomination, feet or inches.

(2) Add the length of the bottom of the vat to the length at the water line.

(3) Add the width of the bottom to the width at the water line.

(4) Multiply these sums (2) and (3) together.

(5) Multiply the length of the bottom by the width of the bottom.

(6) Multiply the length of the water line by the width at the water line.

(7) Add together (4), (5) and (6).

(8) Multiply this sum (7) by one-sixth the perpendicular depth from the water line to the bottom, which gives the capacity of the vat in cubic feet or cubic inches.

(9) If the capacity in cubic inches has been obtained, divide (8) by 231; if the capacity in cubic feet has been obtained, divide (8) by 0.1336. In either case the result will be the capacity of the vat in gallons.

How to Test Arsenical Dip

A testing method, evolved in this Bureau, which is simple and easy to apply, when a vat is to be replenished and the strength of the dip is unknown, because of long usage, is as follows:

If the vat holds 1,500 gallons at the usual dipping depth, i. e., 5 feet, 3 inches, it should be filled to this depth with water, and thoroughly stirred either with a board or by passing a few animals through. The sample should now be taken and tested by the method devised by the Bureau of Animal Industry.

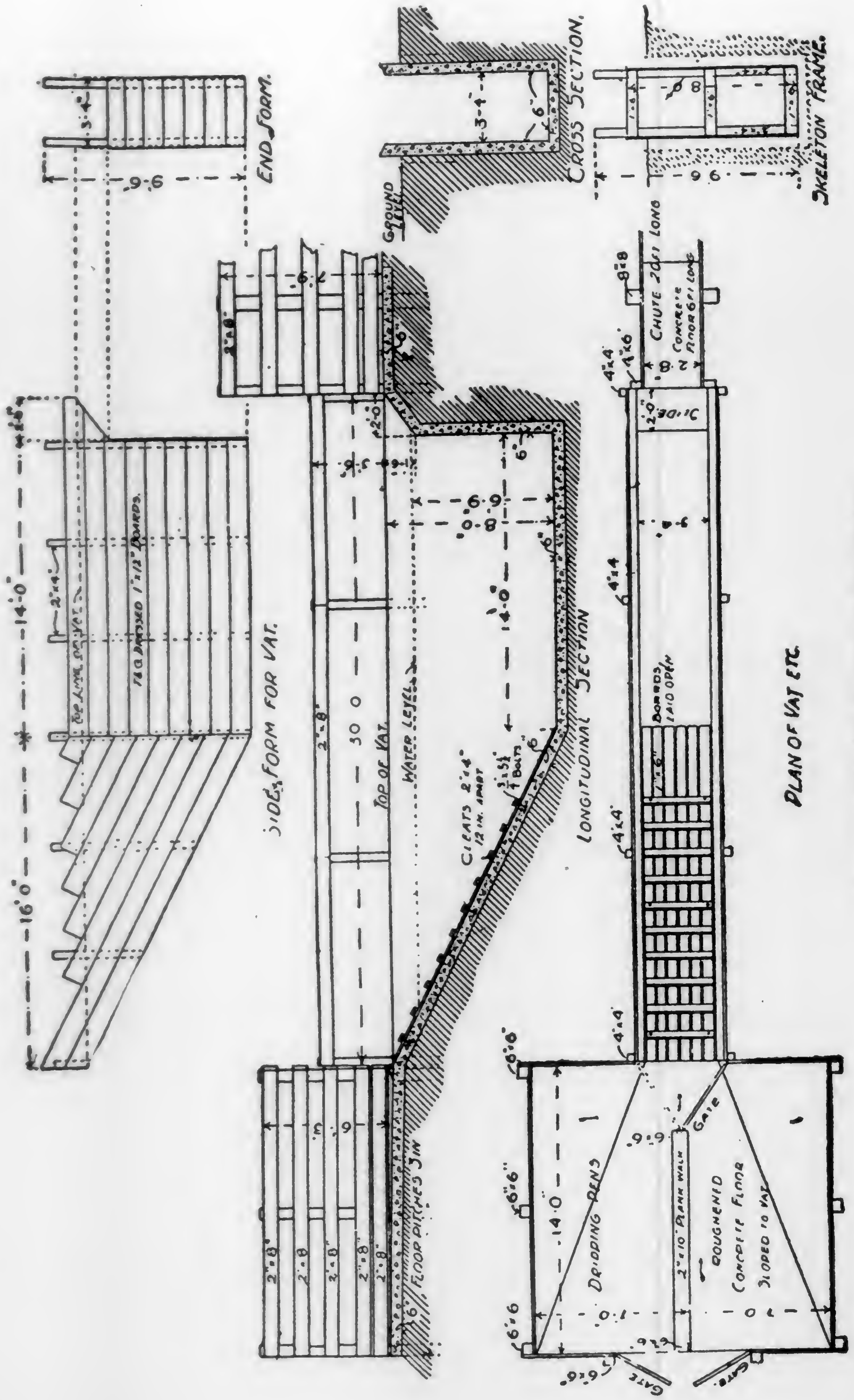
If the 8-lb. formula was used in first filling the vat the theoretical strength was 0.19 per cent arsenic. If the vat now tests, say, 0.10 per cent arsenic, it lacks 0.09 per cent being strong enough. By the following calculation it is easy to determine the amount of 8-lb. concentrate to add to bring the dip up to the original strength. Subtract the present strength from the theoretical strength. The difference will be the numerator and the theoretical strength will be the denominator of a fraction that is to be multiplied by 15, the number of gallons it was first necessary to add. Example: Vat tests, say, 0.10 per cent arsenic. The theoretical strength is 0.19 per cent; which gives the fraction 9-19, which is multiplied by 15. 9-19x15=7 2-19, (seven and two-nineteenths) the number of gallons of concentrate to add.

If the vat holds 2,000 gallons the above fraction should be multiplied by 20 instead of 15. If a 10-lb. solution was used the theoretical strength would be 0.23 per cent arsenic, and 23 would be the denominator of the fraction, instead of 19.

It is very important that the dip be tested frequently, as much time may be spent uselessly. If the dip is too weak the ticks will not be killed, and the effort necessary in handling the cattle will go for naught. It is well, therefore, that there be someone in every community equipped with a testing outfit.

Plan for a Concrete Vat for Dipping Cattle on the Range

Bureau of Animal Industry Circular 207 gives directions for dipping cattle to destroy ticks, including plans and specifications for the construction of the concrete and brick vats. Certain changes in the concrete vat, so as to make it more suitable for range conditions, have recently been suggested and are embodied in the accompanying plan and bill of materials. The principal differences consist in the vat being larger and having perpendicular instead of sloping sides. A longer or shorter vat could be made if desired.



—A concrete vat for dipping on the range

Bill of Materials for Concrete Vat

LUMBER FOR FORMS

14 pieces 1 by 12 inches by 14 feet, tongue-and-groove.
4 pieces 1 by 12 inches by 16 feet, tongue-and-groove.
6 pieces 1 by 12 inches by 20 feet, tongue-and-groove.
4 pieces 1 by 12 inches by 14 feet.
4 pieces 1 by 12 inches by 12 feet.
5 pieces 1 by 6 inches by 14 feet, for cross pieces for forms.
12 pieces 2 by 4 inches by 10 feet.

LUMBER FOR DRIPPING PEN

25 pieces 2 by 8 inches by 14 feet.
1 piece 22 by 10 inches by 12 feet.
10 pieces 6 by 6 inches by 10 feet, for posts.
3 pieces 1 by 6 inches by 18 feet and 3 pieces 1 by 6 inches by 16 feet for gates.

LUMBER FOR CHUTE

2 pieces 4 by 6 inches by 12 feet and 6 pieces 8 by 8 inches by 12 feet, for posts.
10 pieces 2 by 8 inches by 20 feet or 20 pieces 2 by 8 inches by 10 feet.

HARDWARE AND IRON WORK

6 bolts ¾ by 5½ inches, with nuts and washers, for false floor to incline.
1 sheet ¼-inch boiler iron, cut to shape for slide, place bored and countersunk four screws.
2 pair of strap or T hinges 10 inches long, with screws, for gates.
1 pair strap-eye screw hinges for entrance gate to dripping pens.

CONCRETE FOR VAT

17.3 barrels cement.
5.6 cubic yards sand.
9.5 cubic yards rock.

CONCRETE FOR CHUTE AND DRIPPING PEN

6 barrels cement.
2 cubic yards sand.
3.75 cubic yards rock.

To Render Harmless the Arsenic in the Dipping Solution Before Emptying the Vat for Cleaning

Measure approximately the number of gallons of solution left in the vat, and for each 100 gallons add six pounds of slacked lime. Mix the whole thoroughly and allow it to stand for a couple of hours. Then, for each 100 gallons in the vat, take six pounds of ordinary commercial copperas (sulphate of iron) and dissolve it in hot water. Pour the hot copperas solution into the vat, stir it up well and allow the whole to stand for ten or twelve hours. The arsenic unites with the copperas (iron) and will have fallen to the bottom of the vat as an insoluble, harmless precipitate or sediment. The clear fluid on top will contain no arsenic, and may be pumped out on to the ground.

The sediment at the botton of the vat may be taken out and buried, if so desired, although it too will be non-poisonous.

Waterproofing

If the earth around the vat is thoroughly drained the vat may be waterproofed by painting the surface coat; but painting the surface will not give satisfactory results if there is ground water to seep in. The paint may be good hot pine tar, or gas-house tar cut with naptha or gasoline and applied with a brush, or after the mortar coat has hardened the inside of the vat may be painted with an oil-cement made as follows: Mix enough water with Portland cement to make a fairly stiff paste; add to this 5 per cent of heavy petroleum residuum oil based on the weight of the cement, and mix thoroughly until the oil entirely disappears, then add more water and stir until a paint of the consistency of cream is formed. This paint should be applied with a brush and should be well rubbed into the surface. Should the mortar coat be omitted the paint coat should be applied directly to the surface of the concrete.

It is highly important that the vat be water-tight, as a leaky vat gives continual trouble.

Eradication of Ticks by Pasture Rotation Method

Another effective method of eradicating ticks is by adopting what is called the "Pasture Rotation Method," described in Bulletin No. 78, by Dr. J. R. Mohler, of the Bureau of Animal Industry.

It is believed this method is particularly applicable to some parts of Florida, where it is difficult to build the dipping vat and handle cattle often. We, therefore, reproduce the following from the above-mentioned bulletin.

"A very satisfactory method for freeing cattle as well as pastures of the cattle tick is by pasture rotation, which combines the suggestions of Curtice, Butler, and Morgan.

It is based upon the knowledge that by severing the relation of the fever ticks and the animals upon which they develop these ticks will perish. To adopt this plan first divide the infected pasture into two parts, which is best accomplished by a double line of fence with a 10-foot space between the lines to prevent ticks crossing from one pasture to another. In order to observe all possible precautions, this fence should have either a furrow thrown up against it or a board or rail placed tightly along the bottom to help keep the ticks within. All animals that carry the cattle tick are excluded from the first half of the pasture, which may be termed pasture No. 1, from June 1st, until November 10th, at which time all the ticks that were there will have perished from want of a host and the field will be ready for receiving tick-free cattle. The ticky cattle, on being removed from pasture No. 1, on June 1st, are placed in the other half of the original pasture, which may be called pasture No. 2, where they are kept from June 1st, to September 10th. They may now be partly cleaned of ticks by placing them at the latter date (September 10th), in a cultivated field—for instance, a rye or vetch or wheat and vetch field—and by keeping them therein for twenty days, when a large number of ticks will have fallen off. The partly cleaned cattle may then be removed on September 30th, to a field sown to corn and sorghum, corn and cow peas, or a combination of corn, sorghum and cowpeas, or other forage crops.

In this field most of the remaining ticks, if not all of them, will have dropped from the animals within twenty days, but in a few instances the cattle may still be infested, so the animals should be moved on October 20th to a cotton field in which rape or crimson clover has been sown at the last cultivation for the purpose of furnishing food for the cattle while there. The crops should have been gathered from all these fields before turning in the cattle. Here they are kept for another twenty days (to November 10th), not because they would not be free of ticks at an earlier date, but on account of the desire to keep cattle away from pasture No. 1 until November 10th. On this date, these clean cattle are returned to pasture No. 1, which will now be tick-free as a result of the exclusion of animals since June 1st. These cattle should be kept in this pasture until May, by which time the ticks in pasture No. 2 will have starved, owing to the absence of animals therefrom since September 10th. Both the cattle and pastures will now be tick-free and the double line fence between the two fields can be removed and the original pasture restored. This plan, as represented by the diagram, is merely a suggestion of arrangement and may easily be varied with regard to the selection of crops and the location of pastures to suit the demands of individual farms.

To prevent ticks from crawling under either of the fences between fields III and IV, V and VI, it is necessary to have a board or rail placed tightly on the ground along these lines of fence, or to throw up a single furrow along both sides of the fences. To avoid the danger of infestation from the outside, care should be taken to feed animals, in these cases where the pastures or fields are over-stocked on hay, cut from tick-free fields, and to keep out work oxen, mules and horses that may harbor fever ticks, thus preventing reinfestation of the pasture. When the cultivated fields are on a slope, it is advisable to use the lowest field first, in order that the ticks dropped within may not be washed by drainage upon the adjoining fields which are later to hold the cattle. For the same reason, where a stream runs through the fields upon which the cattle are to be placed, the field farthest removed from the head water should be used first. Where an endeavor is made to rid a farm of ticks, it is essential that the work animals (oxen, mules and horses) used in cultivating the fields, be curried to keep off the ticks and prevent the latter from being carried into these fields. If a farm or plantation consists of a pasture and but one field under cultivation, the above plan can be made applicable by fencing off three inclosures in the latter and by rotating the cattle in them every twenty days in the manner just described. The same precautions should be observed in changing the cattle from one lot to another and in preventing ticks from getting into the cultivated field, as are mentioned above."

Glanders

There were twenty cases of glanders in the State during the year, exceeding by six, the number occurring in 1915. As will be seen from the following list, most of these were found in or near Jacksonville. The farmers in other parts of the State were, therefore, protected from a spread of this disease from the probable point of its entrance into the State.

The expense of condemnation was exclusive of travel, $1,433.33.

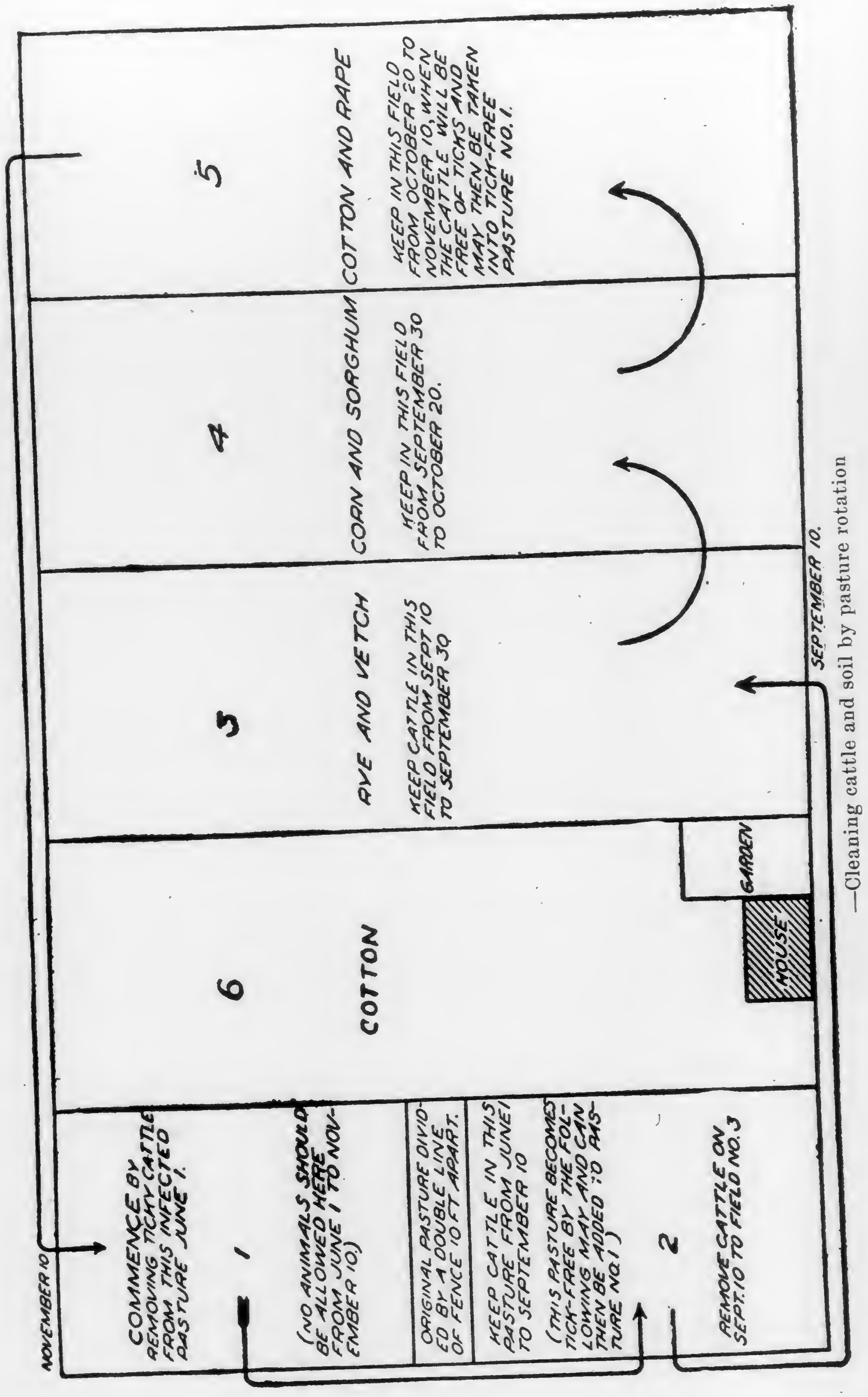
The following form of notification of the existence of the disease now issued to the owner or agent in charge of a glandered horse or mule:

STATE BOARD OF HEALTH OF FLORIDA,
BUREAU OF VETERINARY SCIENCE
Jacksonville, Florida,......................191...

Dear Sir:

A physical examination and a mallein test by Dr...................., Veterinarian of the State Board of Health of Florida, shows that......... horses/mules belonging to you is/are affected with glanders, a fatal, contagious disease in horses and mules, as well as in man.

Chapter 5933 (No. 64) Laws of Florida, declares glanders to be a


5
COTTON AND RAPE
KEEP IN THIS FIELD FROM OCTOBER 20 TO NOVEMBER 10, WHEN THE CATTLE WILL BE FREE OF TICKS AND MAY THEN BE TAKEN INTO TICK-FREE PASTURE NO. 1.
4
CORN AND SORGHUM
KEEP IN THIS FIELD FROM SEPTEMBER 30 TO OCTOBER 20.
3
RYE AND VETCH
KEEP CATTLE IN THIS FIELD FROM SEPT 10 TO SEPTEMBER 30
SEPTEMBER 10.
GARDEN
HOUSE
6
COTTON
NOVEMBER 10
COMMENCE BY REMOVING TICKY CATTLE FROM THIS INFECTED PASTURE JUNE 1.
1
(NO ANIMALS SHOULD BE ALLOWED HERE FROM JUNE 1 TO NOVEMBER 10.)
ORIGINAL PASTURE DIVIDED BY A DOUBLE LINE OF FENCE 10 FT APART.
KEEP CATTLE IN THIS PASTURE FROM JUNE 1 TO SEPTEMBER 10
(THIS PASTURE BECOMES TICK-FREE BY THE FOLLOWING MAY AND CAN THEN BE ADDED TO PASTURE NO. 1)
2
REMOVE CATTLE ON SEPT. 10 TO FIELD NO. 3

—Cleaning cattle and soil by pasture rotation nuisance and requires the owner of stock so affected to abate the same. The enforcement of this law is made a duty of the State Health Officer, and you are, therefore, notified to immediately destroy and thoroughly burn, or deeply bury, in lime, at your own expense, the said............. horses/mules.

The Regulations of the State Board of Health also require the disinfection of the premises, drinking troughs, harness, etc., as well as a mallein test of all other exposed horses and mules, under the supervision of a veterinarian of this Board.

The law directs that not more than $75.00 immunity be paid for any horse or mule, that no owner can be reimbursed for more than ten animals in any one year, when destroyed and disposed of, under the direction of this Board, and that the animals must have been owned in the State one year, previous to condemnation.

Yours very truly,
JOSEPH Y. PORTER, State Health Officer.

Cases of Glanders During the Year 1916

COUNTY	TOWN	MONTH	NUMBER ANIMALS	REIMBURSEMENT
Monroe	Key West	January	One mule	$ 33.33
Duval	Jacksonville	January	One horse	75.00
Orange	Orlando	March	One horse	75.00
Duval	Jacksonville	April	One mule	75.00
Duval	Jacksonville	April	One mule	75.00
Duval	Jacksonville	May	One horse	75.00
Duval	Jacksonville	June	Two horses	150.00
Duval	Jacksonville	June	One mule	75.00
Duval	Jacksonville	July	One horse	75.00
Seminole	Sanford	August	One horse	75.00
Duval	Jacksonville	August	One horse	75.00
Duval	Jacksonville	September	One horse	75.00
Nassau	Hilliard	September	Horse and mule	150.00
Pasco	Hudson	October	One horse	50.00
Duval	Jacksonville	October	One horse	75.00
Duval	Mandeville	November	One mule	75.00
Duval	Jacksonville	December	One horse	75.00
Duval	Jacksonville	December	One horse	75.00

Anthrax

Anthrax appeared again during the year in West Florida. Its proximity to centers of infection in adjoining States where anthrax occurs every summer leads to the conclusion that the infection was brought into the State by buzzards that had feasted on the carcasses of animals dead from anthrax. Over 600 head of cattle were vaccinated with the double Pasteur vaccine, and a certain amount of anti-anthrax serum obtained from the Federal Bureau of Animal Industry was administered simultaneously with the result that the outbreak was promptly checked. Many visits were made to other sections upon the report of the existence of anthrax in them, but in all cases they were cases of acute tick fever or other diseases.

As is the custom in all cases where a vaccine in virus form is applied by the Board, the owners are required to apply for this veterinary service upon the following form:

.............................Florida,
.............................191...

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Florida.

Dear Sir:

I hereby request the State Board of Health of Florida to vaccinate, with anthrax vaccine, ...head of cattle, ... head of horses, and..................head of mules, the same being my personal property.

I further agree that in consideration the State Board of Health, is performing this service without expense to me, I assume all risks and loss incident to the work, aforesaid, and will make no claim for reimbursement for any loss that may result therefrom.

....
Signed.

....
Address.

....
Witness.

SOME DISEASES HITHERTO NOT KNOWN TO EXIST IN FLORIDA

Tapeworm Disease in the Liver of Swine

Five species of tapeworms are commonly found in the intestinal tract of dogs. One of these, the *Taenia marginata,* is of importance to the hog industry because part of its developmental stage is passed in the liver of hogs, where it sets up inflammation, and causes great loss in young pigs. One outbreak of this disease was found near Gainesville a few months ago.

The adult worm in the bowel of the dog is constantly throwing off segments of its body. These contain eggs and pass out of the dog and are swallowed by the hog along with feed and drink. In the hog's stomach the eggshell is digested and the embryo is liberated. The embryos, on reaching the intestine, penetrate the wall of the intestine and enter the portal veins, by which they are carried to the liver. They are sometimes carried to other organs. After lodging in a small liver vein they bore their way out to the surface of the liver, leaving tracks of their work.

They sometimes bore all the way through the capsule of the liver and drop out into the peritoneum causing peritonitis. When the invasion is heavy acute inflammation of the liver is brought about and in many cases fatal hemorrhage from the liver, with sudden death, occurs. When they are carried along the veins to the lungs, broncho-pneumonia, and even pleurisy, occur.

In young pigs the course of the disease is limited to a few days' sickness; with symptoms of depression, staggering gait and dullness. Death is sudden. In other cases the pigs may live several weeks until there is marked anaemia and debility.

As the dog is the source of the trouble, this animal should be treated regularly two or three times a year, for tapeworms, or dogs, and especially sheep dogs, should be kept away from the hogs.

Enzootic Pneumonia in Young Pigs

One of the most important diseases in young pigs is an infectious pneumonia. It may occur in a mild form in which the loss is small, or it may occur as an epidemic or enzootic and carry off whole litters. While it occurs in the first few weeks of life, as a rule, it may attack pigs that are several months old. The same disease attacks young calves and lambs, but rarely young colts. Although it is an infectious disease, certain conditions predispose to its onset. These are exposure to cold, dampness, improper feeding and inbreeding. The younger pigs may die in a few days of the acute form of the disease, while in older pigs the chronic form is seen and recovery may occur, or the animal die of a lingering sickness.

Medical treatment is usually useless. There is reason to believe a bacterin or bacterial vaccine may be used with success in immunizing the well pigs. This vaccine is made by isolating, by cultural methods, the causative germs from the lungs, heating these germs for about an hour at 60° centigrade to kill them. These dead germs are injected under the skin three different times each ten days apart, in varying doses.

Other things to do, are to separate the sick from the well, bury or burn all carcasses, provide warm, dry pens and good food.

Takosis in Goats

While goats are popularly supposed to be unusually disease-resistant, they are frequently affected with a contagious disease to which the name Takosis, a Greek word which means "to waste," has been applied. The disease is of a chronic nature and usually is well established in a flock before trouble is suspected. The first symptoms are weakness, a languid and listless appearance and drowsy appearance of the eyes. There is moderate fever, cough, and discharge from the nose and eyes. The appetite, while not good, is not lost.

The mouth is pale, indicating great anaemia. The breathing is quickened and labored. There is a discharge from the bowels which has a very offensive odor, a few days prior to death, in some cases. The disease runs its course in from eight days to eight weeks, and is always fatal. The younger goats are the more susceptible, but the older ones are by no means immune.

The cause of the disease is a micrococcus which has been named Micrococcus caprinus. This germ is found in the blood and all internal organs, and affects goats only.

Medical treatment of this disease is useless. An outbreak near Jacksonville, was handled by vaccination, with considerable success. Cultures of the germs were made from the lungs and from these a vaccine was made by heating the cultures at 60° centigrade for about an hour. This bacterin was prepared by Mr. H. D. Venters, Assistant Bacteriologist, and was injected in 1 c.c. quantities every ten days, three times. In time, the outbreak was stopped. The goats that were already infected at the time of vaccination all died. Those that were not infected were rendered immune, by vaccination.

Stomach Round Worm in Sheep

Of all the domesticated animals, the sheep is the most afflicted with internal parasites.

Although there are comparatively few sheep in Florida, we are frequently in receipt of letters from sheep owners complaining of various ailments. There have been few opportunities presented for making the proper kind of investigation of these troubles; hence, we may say little is known of the diseases affecting Florida sheep. Recently, however, a sheep was received from Alachua County, with a statement that many had been lost from the disease affecting this one.

The animal was received in a dying condition. A post-mortem examination was promptly held. There was great emaciation and pronounced anaemia. When cut into little or no blood escaped. All the organs, beyond their almost bloodless condition were normal in appearance, except the fourth or last stomach. Here, there was evidence of inflammation and hundreds of small reddish worms, about an inch long and hair-like in size. Their great number was plainly evident when the contents of the stomach were emptied into a bowl containing water. Worms in such numbers could easily produce death from gastritis or possibly from absorption of the poisons excreted by them.

This worm Strongylus contortus, or the twisted strongyle, is an inhabitant of the fourth stomach of sheep and goats. Though in the majority of flocks it produces but little disturbance, its presence in such numbers as was the case in this sheep leave little doubt that deaths in this flock were caused by it.

Cooper Curtice in "Animal Parasites of Sheep" has the following to say about this worm and how to cure the animals infected with it.

Occurrence—This worm may be found in all stages in the fourth stomach or abomasum of sheep. When collected immediately after death from a slaughtered sheep they may be detected adhering by their heads to the mucous membrane. They are then of a reddish color, which may be because they feed in part upon the blood of the victim.

The life history of Strongylus contortus seems to be apparently simple. Among a number of lambs kept at the Experiment Station in 1888, were two or three which had been raised there. A post-mortem examination of one of these, with four other lambs which had been at the Station for the five previous months, revealed numbers of Strongylus contortus in all stages of growth. These lambs were supplied with well water, and were allowed to run in small, dry, grassy yard connected with a stable. The presence of these species of all sizes in the former group of lambs showed that they acquired them on the place, and that their development, that is, they did not pass through a secondary host in passing between the sheep and the lambs, for all of the conditions were under inspection. The grass in the yard became very short, and probably it was because the sheep ate it so close to the ground that they became more infested with worms than sheep ordinarily do. The history, therefore, is probably as follows: The eggs fall to the ground; they are eaten by other sheep along with their feed, and they then arrive at the stomach and develop there.

The disease they cause cannot easily be distinguished from that produced by other intestinal parasites. In the worst cases, besides a general lack of tone and good health, there is weakness, paleness, some fever, diarrhea, etc. In fatal cases death is said to occur within a very few days after the illness is observed; but, as the parasites develop slowly, it is probable that no symptoms of illness are apparent until after the lambs have been ailing for some time. A positive diagnosis is to be made only by a post-mortem examination. The little worms, if present in large numbers, will appear like masses of threads lying in the stomach. If the sheep has been killed for examination, the worms will be seen wriggling and squirming in all directions.

Treatment—Various remedies are proposed, but of those available, an emulsion of milk and turpentine, prepared by shaking the mass well, seems most practicable.

Add 1 part of spirits of turpentine to 16 parts of milk, and give from two to four ounces of it to each animal, according to age of patient. One dose should be sufficient; if not, repeat it in three or four days. Or, take of linseed oil, one ounce; turpentine, one-half ounce, shake well and give as one dose. Quantities sufficient for any number of sheep may be made up in these proportions.

The following recipe is from Finlay Dun's Veterinary Medicine: Common salt, 3 pounds; powdered ginger and niter, half a pound each; dissolved in 3 gallons of warm water; add 24 ounces of turpentine when nearly cold. The dose for lambs between four and six months' old is 2 ounces. The entire quantity is sufficient for one hundred and sixty lambs. For delicate lambs, which are coughing and purging, the same writer recommends oil of turpentine, powdered gentian, and laudanum, 2 ounces each, all to be dissolved and stirred in 1 quart of linseed tea or lime water. This quantity is sufficient for ten or twelve doses.

Good, nourishing food, and a dry yard in summer, or a healthy, well-ventilated stable in fall and winter are advisable. In giving medicine, drench from a horn, a spoon, or a stout glass bottle. Bottles are always liable to break. Let an assistant throw the sheep onto its haunches and hold it between his legs back toward him. With the lower jaw seized in his left hand, from the left side he can either seize the upper jaw or pull out the cheek-pouch with his right. The medicines are best administered while the sheep are thirsty. Small doses may be diluted, but a dose of 4 to 6 ounces is more apt to run directly into the fourth stomach than larger doses. Otherwise, some of the latter might be diverted into the second stomach and fail of an immediate effect.

The following receipt was recommended to the readers of Field and Farm, August 7, 1889, as a preventive remedy for worms in sheep. Mr. G. B. Bothwell, of Breckenridge, Mo., who used it for fifteen years with success, is its author.

Salt, 1 bushel; air-slacked lime, 1 peck; sulphur, 1 gallon; pulverized rosin, 2 quarts; put in trough with cover, where sheep can have free access. When sheep become thoroughly infested with worms death is almost sure to follow, but the above, if kept before the sheep, will surely act as a preventive.

Demodectic Mange in Swine

Recently part of the ham of a hog was received with a request from the owner that an opinion as to the condition of the hog, be given. The owner states he had thrown the whole carcass away.

Examination showed the meat to be in sound condition. The skin, however, was "peppered" with pustules about one-fourth of an inch in diameter. Pressure upon the area adjacent to a pustule caused a fine, sinuous stream of cream-colored material to escape. Placing some of this material upon a slide and examining with a low-power microscope, revealed the presence of numerous parasites which were easily distinguished as the Demodex folliculorum, a mange mite which also affects man and dogs, causing in the latter that obstinate form of mange known as Red Mange.

As it is impracticable to treat this skin disease in the hog the best plan to pursue would seem to be the slaughter of the animals before the disease has become sufficiently extensive to cause emaciation. The disease being limited entirely to the skin, there seems no good reason why the carcass should not be used for food, after it has been skinned.

The skin should, of course, be burned, or it may be boiled up and fed to other hogs. The pens, in all cases, should be thoroughly cleaned of all litter and then disinfected with a 2 per cent solution of a coal tar dsinfectant.

Publications

The publications, some of which were quotations and others original, issued from this Bureau during the year, in "Health Notes," are as follows: "How to Get State Veterinary Service;" "Not All Hog Cholera;" "Large Area Tick Free;" "Decrease in Glanders in 1916;" "Dogs Carry Disease;" "New Treatment for Black-Tongue in Dogs;" "Tick Eradication;" "Boundaries of Territory That Will Be Declared Tick-Free;" "Dipping Vat and Shipping Pens to be Built at Jacksonville;" "Divorce Proceedings Against Cattle Tick;" "Tick Eradication;" "Tick Quarantine;" "Lice on Hogs;" "Guarding Meat Supply;" "Foot and Mouth Disease Reappears;" "Escambia County Will Eradicate Ticks;" "The State Dipping and Shipping Facilities at Jacksonville;" "Another Outbreak of Anthrax;" "A Durable Whitewash;" "The State Veterinarian;" "A Clear, Germ-free Hog Cholera Serum;" "The United States Again Free From Foot and Mouth Disease;" "How to Feed Baby Chicks to Prevent Loss From Diarrhea;" "Disposal of Dead Animals;" "Management of Tuberculosis in Dairy Cattle in Hawaii;" "Louisiana to Fight Tick;" "Intertransmissibility of Tuberculosis;" "Tick Eradication;" "Tick Ticks," and "Stomach Worms in Sheep."

The following Bulletins were issued, in pamphlet form: "How to Test Cattle for Tuberculosis;" "Hookworms in Dogs;" "Tick Eradication;" "Hog Cholera;" "Some Poultry Pests," and "Directions for Making the Self-boiled Cattle Dip."

Movement of Certified Animals Into and Out of the State in 1916

Total number of horses brought into State	1,559
Total number of mules brought into State	4,712
Total number of cattle brought into State	2,189
Total number of swine brought into State	440
Grand total of certified animals shipped in	8,900

Total number of horses shipped out of State	128
Total number of mules shipped out of State	96
Total number of cattle shipped out of State	8,333
Total number of swine shipped out of State	489
Grand total of certified animals shipped out	9,046

Florida Live Stock Estimates for Seven Past Years

The Bureau of Crop Estimates, in cooperation with the Weather Bureau, United States Department of Agriculture, makes the following estimates for the years 1911, 1912, 1913, 1914, 1915, 1916 and 1917:

	Number	Value per head
Horses		
January 1, 1911	49,000	$113.00
January 1, 1912	52,000	106.00
January 1, 1913	53,000	118.00
January 1, 1914	55,000	122.00
January 1, 1915	57,000	121.00
January 1, 1916	59,000	112.00
January 1, 1917	60,000	120.00
Mules		
January 1, 1911	24,000	161.00
January 1, 1912	25,000	154.00
January 1, 1913	26,000	152.00
January 1, 1914	27,000	168.00
January 1, 1915	28,000	163.00
January 1, 1916	29,000	154.00
January 1, 1917	31,000	166.00
Milch Cows		
January 1, 1911	118,000	35.00
January 1, 1912	123,000	33.50
January 1, 1913	123,000	36.00
January 1, 1914	128,000	38.00
January 1, 1915	133,000	42.50
January 1, 1916	136,000	40.00
January 1, 1917	141,000	40.00
Other Cattle		
January 1, 1911	736,000	12.40
January 1, 1912	758,000	13.10
January 1, 1913	766,000	12.20
January 1, 1914	735,000	13.70
January 1, 1915	735,000	14.50
January 1, 1916	772,000	14.90
January 1, 1917	865,000	16.50
Sheep		
January 1, 1911	119,000	1.99
January 1, 1912	120,000	2.10
January 1, 1913	119,000	2.10
January 1, 1914	118,000	1.90
January 1, 1915	119,000	2.20
January 1, 1916	119,000	2.30
January 1, 1917	119,000	2.70
Swine		
January 1, 1911	867,000	4.60
January 1, 1912	954,000	5.20
January 1, 1913	878,000	5.90
January 1, 1914	904,000	6.00
January 1, 1915	949,000	6.00
January 1, 1916	996,000	6.00
January 1, 1917	1,100,000	6.50

There were 4,289 pieces of mail, telegrams, etc., received by the Bureau of Veterinary Science during the year.

There were 4,301 pieces of mail, telegrams, etc., sent out from the Bureau of Veterinary Science during the year.

REPORT OF DR. W. A. MUNSELL,

Assistant Veterinarian

GREEN COVE SPRINGS, FLA., January 1st, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Florida.

DEAR DOCTOR:

I herewith submit my annual report of work as Assistant Veterinarian for the year 1916.

In addition to the following assigned cases of which I made personal investigation, I have answered ninety-seven letters of inquiry relative to treatment of cases of surgical and medical nature, not coming under the head of infectious and contagious disease and not requiring my attention in person.

Respectfully submitted,
W. A. MUNSELL,
Assistant Veterinarian.

INVESTIGATION AND WORK ON HOG DISEASE

Date	Place	Owner	Diagnosis or Object
Jan. 22	Raiford	Bradford Farms	Vaccinated 100 head against cholera
Mar. 28	Floral City	M. M. Smoak	Vacinated 35 head against cholera
June 21-23	Apopka	C. H. Baker	Post mortem and found cholera
Aug. 9-11	Morriston	A. L. McKay	Vaccinated 378 head against cholera

INVESTIGATION OF HORSE DISEASES

Date	Place	Owner	Diagnosis
Jan. 21	Macclenny	Macclenny Live Stock Company	Distemper
Feb. 2	Dowling Park	F. P. Parker	Digestive disorders and staggers
Mar. 14	Orlando	Pure Food Store	Glanders and condemned
May 29-30	Miami	Dr. Schofield	Professional Testimony on soundness and age
June 19	Evinston	B. Smith	Staggers and forage poison
July 21	Pierson	P. A. Lindahl	Abscesses
Aug. 3	Dade City	Dr. A. T. Weaver	Animal dead, suspicious glanders case
Aug. 15	Sanford	G. E. Vincent	Glanders and condemned
Oct. 5	Raiford	State Prison Farms	Spiroptera megastoma in a jack
Oct. 16	Bronson	R. S. McLeod	Distemper in colts
Oct. 12-14	Hudson	W. W. Rzasa	Glanders and condemned
Nov. 13	Bryceville	B. R. Pringle	Glanders and condemned

INVESTIGATION AND WORK ON CATTLE DISEASE

Date	Place	Owner	Diagnosis	Object of Detail
Jan. 15	Floral City	S. D. Moon	Mistletoe poison	
Jan. 18	Jacksonville	Jacksonville Union Stock Yards		Making dip and dipping cattle for shipment
Jan. 19	Gainesville	University of Florida		Address on Tick Eradication to Short Course Students
Jan. 20	River Junction	State Hospital for the Insane	Mistletoe poison from mouldy ensilage	
Feb. 6-7	Tampa		Attending Live Stock Association and Veterinary meetings	
Mar. 1-4	Grand Ridge	W. J. Singletary		Preparing dip and dipping cattle
Mar. 5-6	Lake Worth	A. S. Lovett	Tick Fever and digestive disorder	
Mar. 20	Jacksonville	Jacksonville Union Stock Yards		Replenishing dipping vat and dipping cattle
April 12-17	Plant City	City Board of Health		Tuberculine testing dairy cattle
April 20-22	Jay	J. E. Wolf	Suspicious of Anthrax	
May 3	McIntosh	S. H. Gaitskill		Preparing self-boiled dip
May 5	Fairfield	M. J. Osteen	Food poison	
May 26	Gainesville	City Board of Health	Tuberculine testing dairy cattle that supply milk within city	
June 2	Gainesville	City Board of Health	Complete above testing	
June 5-6	Kissimmee	Carson and Son	Parasitic and digestive disorder in sheep	
June 7-8	Fruitland Park	Mr. Jones	Tick Fever in dairy cows brought from Tennessee	
June 16	Mt. Verde	Lowery Bros.		Vat construction
June 17	Fruitland Park	Mr. Jones		Preparing dip and dipping cattle
June 26-27	Providence	J. D. Stonzell	Tick Fever in calves	
July 18-20	Arcadia	Parker Bros.		Vat construction
July 27-28	Glen St. Mary	Glen St. Mary Nursery Co.	Forage poison from eating Oleander cutting	

Date	Place	Owner	Diagnosis	Object of Detail
Aug. 1	Mt. Verde	Lowery Bros.		Preparing cattle dip
Aug. 2	Fruitland Park	Jones Dairy		Preparing self-boiled dip and dipping cattle
Aug. 18	Jacksonville	Union Stock Yards		Spraying and disinfecting non-infectious pens
Aug. 24-26	Wilmarth	Frank Drew		Preparing dip
Aug. 29	Jacksonville	Jacksonville Union Stock Yards		Dipping cattle
Aug. 31	Komoko	J. B. Kennard	Food poison in calves	
Sept. 11-15	Arcadia	Parker Bros.		Preparing dip and dipping cattle for shipment to Texas
Sept. 21-23	Arcadia	King Lumber Co.		Preparing dip and dipping cattle
Sept. 30	Jacksonville	Jacksonville Union Stock Yards		Testing dip and dipping cattle for shipment
Dec. 4	Jacksonville	Duval County Fair		Spraying cattle pens and sheds

REPORT OF DR. J. W. DE MILLY,

Assistant Veterinarian

TALLAHASSEE, FLORIDA, January 1st, 1917.

Dr. Joseph Y. Porter,
State Health Officer,
Jacksonville, Florida.

DEAR DOCTOR:

From May 3-4-14-29 and June 1-2 and 8, I was detailed on anthrax investigation in Leon and Santa Rosa Counties. I found it necessary to vaccinate 604 head of cattle against the disease. No other cases developed.

May 17-19: I visited Blountstown to investigate disease in cattle, history of which led to diagnosis of Hemorrhagic septicaemia.

June 3: I visited Wacissa, Jefferson County, to investigate disease in a mule; diagnosis, stomatitis.

June 5-7: Boon Brothers' place, Leon County, investigating disease in cattle, Texas fever.

June 8-11-13-15: R. G. Johnson's place, Leon County, investigating disease in cattle, Texas fever.

June 25: Ellaville, Madison County, investigation of disease in cattle, Texas fever.

July 17-18: Detailed to Chipley, Walton County, to investigate report of anthrax in cattle. History of case indicated Texas fever.

July 28-29: Detailed to Jefferson County to investigate report of glanders, no diagnosis.

July 28-29: Detailed to Jefferson County to investigate report of anthrax in cattle; diagnosis, mad itch.

July 30-31: Official visit office, State Board of Health, Jacksonville, Florida.

August 9: Detailed State Convict Farm, Raiford, to investigate disease in a bull and jack; mange on bull and summer sores in jack.

August 11: Detailed to Jackson County to investigate disease in cattle; diagnosis, mad itch.

August 12: Detailed to DeFuniak Springs to investigate disease in cattle. No case was to be seen and history was not sufficient to make diagnosis.

September 7-8: Detailed to Bonifay to investigate disease in hogs; diagnosis, hog cholera.

September 12: Detailed to Gadsden County to investigate disease in cattle. No case seen; history indicated stomatitis.

September 17-18: Detailed Nassau County to investigate disease in mule, clinical case of glanders with positive mallein reaction. Test applied to one horse at same time gave positive reaction.

October 4-5: Detailed to Grand Ridge to fill dipping vat; found it necessary to return there on the 12th and 13th as the ingredients had not arrived on my first visit.

November : Vaccinated several herds of hogs, in Leon County, against cholera.

December 1: Detailed to Branford to investigate disease in horse and mule; diagnosis, infectious stomatitis.

December 1: Live Oak, investigated disease in hogs; diagnosis, hog cholera.

December 11: Detailed to Madison to superintend vat construction. As the contractor was an experienced concrete worker, I found it only necessary to go over the plans with him.

December 13: Detailed to Quincy to investigate disease in cattle. Saw no sick animals and history was not sufficient to make diagnosis.

Respectfully submitted,
J. W. DEMILLY,
Assistant Veterinarian.

INDEX TO ANNUAL REPORT

A

Page
Abbatoirs, Sanitary.......... 195
Animals, Movement of Certified, Into and Out of the State in 1916 241
Animal Parasites, Specimen Chart.......... 58
Anthrax, Report of Dr. Chas. F. Dawson, Veterinarian.......... 234
Arsenical Dip, How to Test.......... 226
Assistants to the State Health Officer:
  Changes in Personnel of.......... 39
  Duties of.......... 40
  Reports of..........63, 67, 70, 75, 89, 92, 101, 107, and 39
  Special Details of.......... 41
Assistant Veterinarians, Reports of..........243 and 246

B

Bacteriological Laboratories, Changes in Personnel of.......... 47
Bacteriological Specimens:
  Examination of, in All State Board of Health Laboratories During 1916 (By Months and Disease).......... 50
  Examination of, in the Central Laboratory, 1916 (Statement) 117
  Examination of, in Miami Laboratory, 1916, (Statement)..... 133
  Examination of, in Tallahassee Laboratory, 1916.......... 139
  Examination of, in Tampa Laboratory, 1916, (Statement)... 124
  Examination of, in Pensacola Laboratory, 1916, (Statement) 128
  Examination of, in the Several Laboratories of the State Board of Health During 1916, (Statement by Months).. 5
Bacteriologists of the State Board of Health:
  Reports of..........115, 121, 127, 131 and 135
Bartlett, Dr. Charles W., Report of.......... 63
Bennett, Miss Margaret L., Report of.......... 154
Biological Products, Distribution of, During 1916.......... 37
Birge, Dr. E. G., Bacteriologist, Central Laboratory, Report of.. 115
Board:
  Expenditures of, for year ended December 31st, 1916 (by Bureaus).......... 23
  Expense of Office and Work at Time of Organization of..... 22
  Funds of, Concerning Shortage of, at End of 1916.......... 24
  Increased Scope of the Work of.......... 23
  Statement of Receipts of, for the Year Ended December 31st, 1916.......... 24
Brevard, Dr. E. M., Report of.......... 107
Brink, Dr. F. A., Report of.......... 127
Bureau:
  Of Communicable Disease.......... 14
  Of Sanitary Engineering.......... 20
  Vital Statistics:
    Expense of.......... 24
    Report of Dr. Joseph Y. Porter, State Health Officer.... 20
  Veterinary Medicine.......... 21
  Veterinary Science, Organization of.......... 216
Bureaus:
  Comments on Progress of the Work of the Several.......... 9
  Division Into.......... 9
  Expenses of Various, and Departments and Salaries of Employees.......... 21

C

Page

- Cattle Dip, Self-Boiled 224
- Cattle Dipping Vat:
  - Concrete, Bill of Materials for 229
  - How to Determine the Capacity of a 224
  - Plan for a Concrete, for Dipping Cattle on the Range 227
  - Report of Dr. Charles F. Dawson, Veterinarian 221
  - Waterproofing 230
- Cattle Disease, Investigation of Work on 244
- Children:
  - Defective Teeth 76
  - Indigent Crippled, Treatment of 59
  - Medical Inspection of School 59
  - School, The Need for Proper Supervision of Health of 75
- Chlorine, Liquid, Apparatus for Water 190
- Cholera, Hog 218
- Communicable Diseases:
  - Distribution of as Diagnosed by the Laboratories of the State Board of Health for the Year 1916, 51 through page 55
  - No Serious Outbreaks of 33
  - Relative to Rule Requiring Report of 33
  - Report of Dr. J. E. Taylor 100
- Crigler, Dr. W. P., Report of 89
- Crippled Children, Indigent, Treatment of 59

D

- D'Alemberte, Dr. C. W., Report of 67
- Dawson, Dr. Charles F., Chief Bureau of Veterinary Science, Report of 215
- DeMilly, Dr. J. W., Assistant Veterinarian, Report of 240
- Diarrhoea and Enteritis 213
- Dip:
  - How to Test Arsenical 226
  - Self-Boiled Cattle 224
- Diphtheria, Specimen Examination Chart 56
- Diseases:
  - Cattle, Investigation and Work on 244
  - Contagious, Report of Dr. J. E. Taylor 100
- Disease, Communicable:
  - Bureau of, Report of Dr. Joseph Y. Porter 14
  - Distribution of, as Diagnosed by the Laboratories of the State Board of Health for the Year 1916, pages 51 through 55
  - No Serious Outbreaks of 33
  - Relative to Rule Requiring Report of 33
- District Public Health Nurses:
  - Changes in Personnel of 43
  - Extension of Scope of Work of 43
  - Qualifications for Appointment 42
- Dobbs, Dr. C. H., Chief of the Bureau of Communicable Diseases, Report of 31
- Drainage and Sewage Well Practices 175
- Drinking Cups, and Common Towels 78
- Dysentery, Investigation of Prevalence of, in Lakeland 79

E

Page

- Educational Lines, Progress Along 10
- Engineering Bureau, Report of Chief of 162
- Enzootic Pneumonia in Young Pigs 236
- Eradication of Ticks 220
- Exhibit, former method of handling, Educational 12
- Exhibit Train:
  - Comparing Cost and Efficiency of Service 12
  - Low Cost of Operation of 11
  - Referring to Courtesy of Railroads in Hauling 11
  - Report of Dr. Joseph Y. Porter 10
  - Payment Made for 25
- Expense:
  - Additional, of Bureau of Sanitary Engineering 25
  - Additional, in Employment of District Nurses 25
  - Card Index System of Tabulation 9
  - Office and Work at Time of Organization of Board 22
  - Of Various Bureaus and Departments and Salaries of Employees, Concerning 21
  - Of Vital Statistics Bureau 24
- Expenditures:
  - Of the State Board of Health of Florida for the Year Ended December 31st, 1916, by Bureaus (Statement) 23
  - Of the State Board of Health of Florida for Year Ended December 31st, 1916 (Statement) preceding page 25
- Eye Tests 76

F

- Foote, Miss Irene R., Report of 147
- Foster, Dr., of California, Letter of, Referring to Medical School Inspection 17
- Fox, Dr. Harold H., Bacteriologist, Tallahassee Laboratory, Report of 135
- Fox, Dr., Relative to Recommendations 32
- Funds:
  - Arrangements Made With the Lewis State Bank for Paying of Vouchers at a 2% Discount 25
  - Concerning Shortage of, End of 1916 24

G

- Gantt, Lottie Culp, Public Health Nurse of the State Board of Health, Report of 158
- Garbage, Collection and Disposal of 195
- Glanders:
  - Cases of, During the Year of 1916 234
  - Report of Veterinarian 232
- Goats, Takosis in 236
- Gonorrhoea, Specimen Examination Chart 58
- Growth of Florida Towns, Relative to 168

H

Page

Health Notes, and the Weekly Press Service ... 13
Heck, Dr. M. E., Report of ... 101
Hog Cholera ... 218
Hog Cholera Serum, Statistics ... 219
Hogs:
  Demodectic Mange in ... 240
  Tapeworm in the Liver of ... 235
Hospitals, Isolation, Report of Dr. C. H. Dobbs ... 35
Hygiene, School ... 194

I

Illumination ... 77
Imhoff, Dr., Quotations from, Concerning the Septic Tank ... 172
Imhoff Tanks, Process of the Explaining of the ... 172
Infantile Paralysis, Relative to Precautions Taken to Guard Against Introduction of ... 33
Inspections by Sanitary Patrolman, Tampa, for the Year Ended December 31st, 1916 ... 66
Inspection Tours:
  Report of Dr. M. E. Heck ... 102
  Report of Dr. J. E. Taylor ... 99
Inspectors, Veterinary, State ... 216
Isolation Hospitals:
  Action Taken by County Commissioners of Dade and Duval, Relative to ... 19
  In Dade, Duval, Escambia and Hillsborough Counties ... 18

K

Kirk, Mrs. Lydia L., District Public Health Nurse, Report of ... 146

L

Laboratories, Diagnostic:
  Changes in Personnel of ... 47
  No. of Examinations in ... 48
  Two, Referring to Wassermann Tests Done in ... 14
Laboratory Work ... 14
Lakeland, Investigation of Prevalence of Dysentery in ... 79
Law, Medical Inspection of School Children, Need of Change in .. 16
Lee, Mrs. Rhea H., District Public Health Nurse, Report of ... 154
Live Stock, Florida, Estimates for Seven Past Years ... 241

M

Malaria:
  In Western Sections of the State ... 7
  Specimen Examination Chart ... 57
Mange, Demodectic, in Swine ... 240
Medical Inspection of School Children:
  Comments on, Report of Dr. Joseph Y. Porter ... 16
  Law, Need of Change in the Present ... 16
  Letter of Dr. Foster, of California, Referring to ... 17
  Report of Dr. C. H. Dobbs ... 59

Page

  Table ... 61
  Tabulation, preceding page ... 62
Mills, Dr. H. R., Bacteriologist, Tampa, Laboratory, Report of 121
Municipal Sanitation ... 78
Munsell, Dr. W. A., Assistant Veterinarian, Report of ... 243

N

Nurses, District Public Health:
  Changes in Personnel of ... 43
  Extension of Scope of Work ... 43
  Qualifications for Appointment ... 42

O

Orthopedic Department of the State Board of Health:
  Report of ... 110
  Statement of Work Done During Year 1916 ... 113 and 114

P

Paschall, Miss Eula Lee, Report of ... 141
Personnel:
  Assistants to the State Health Officer, Changes in ... 39
  Diagnostic Laboratories, Changes in ... 47
  District Public Health Nurses, Changes in ... 43
Pigs, Enzootic Pneumonia in Young ... 236
Plumbing Code, State ... 196
Porter, Dr. Joseph Y., State Health Officer, Report of ... 5
Porter, Dr. J. Y., Jr., Assistant to the State Health Officer, Report of ... 70
President's Letter of Transmittal ... 1
Press Service, Weekly and Health Notes ... 13
Privies, Report of Mr. George W. Simons, Sanitary Engineer ... 194
Publications ... 240
Public Health Nurses, District, Reports of ... 141

R

Rabies, Prevalence of, Report of Dr. C. H. Dobbs ... 36
Receipts, Statement of, of the State Board of Health of Florida for the Year Ended December 31st, 1916 ... 24
Recommendations, Chief, Bureau of Engineering ... 197
Regulations, Referring to Powers of the Board for Enforcing ... 26
Report of Orthopedic Department of State Board of Health ... 110
Roach, Mrs. Mary Eleanor, District Public Health Nurse, Report of ... 150
Round Worms, Stomach, in Sheep ... 237

S

Sanitary Abbattoirs ... 195
Sanitary Engineering, Bureau of:
  Additional Expenses of ... 25
  Report of Dr. Joseph Y. Porter, State Health Officer ... 20
  Water and Chemical Work of Laboratory Put Under Supervision of ... 21

Page
Sanitary Patrolman, Inspections by, Tampa, for the Year Ended December 31st, 1916 66
Sanitation, Municipal 78
Sanitation, School 77
School Inspection, Relative to Checking Up the Work of 77
School Work, Report of Dr. J. E. Taylor 97
School Hygiene 194
School Sanitation 77
Scott, Mrs. F. A., District Public Health Nurse, Report of 152
Self-Boiled Cattle Dip 224
Septic Tank, Quotations from Dr. Imhoff, Concerning the 172
Sewage Disposal:
  Method 172
  Plant Operation 173
  Plants, Workmanship and Construction 174
  Raw 177
  Residential, Designs for Plants 194
Sewage and Drainage, Well Practices 175
Sewage and Water Laboratory 191
Sewage and Water, Studies of, to be Carried on In the Laboratory 191
Sewage Wells, Relative to Surveys of 177
Sewage and Sewage Disposal, Status of 163
Sewerage:
  Construction in 51 Reported Cities and Towns of Florida 171
  Installations, Distribution of, According to Population 167
  Systems, Sanitary, Installed in Cities and Towns 165
Sheep, Round Worms in 237
Sherman, Miss Harriett J., District Public Health Nurse, Report of 141
Simons, Mr. George W., Jr., Chief, Bureau of Sanitary Engineering, Report of 162
Simpson, Dr. J. Knox, Assistant to the State Health Officer, Surgeon in Charge of the Crippled Children Work of the State Board of Health 110
Sludge, Activated, Recommending an Experimental Plant for 178
Smallpox, Decrease in, Report of Dr. C. H. Dobbs 34
Spencer, Mrs. Mary H., District Public Health Nurse, Report of 142
Springs 191
Stevens, Mrs., at Ocala, Procedure Pursued by 76
Survey, Public Health of Florida 8
Swine:
  Demodectic Mange in 240
  Tapeworm in the Liver of 235
Syphilitics, Subsequent History of, After Wassermann Test, Relative to 49

T

Takosis in Goats 236
Tapeworm in the Liver of Swine 235
Taylor, Dr. J. E., Report of 92
Teeth, Defective 76
Tick Eradication:
  By Pasture Rotation Method 230
  Report of Dr. Chas. F. Dawson, Veterinarian 220
Towels, Common and Common Drinking Cups 78

Page
Trachoma:
  Report of Dr. J. E. Taylor 100
  Report of Dr. C. T. Young 77
Train:
  Comparing Cost and Efficiency of Service 12
  Exhibit, Educational Health 10
  Low Cost of Operation of 11
  Referring to Courtesy of Railroads in Hauling 11
Tuberculosis, Anti-, Work 45
Tuberculosis:
  Specimen Chart 56
Typhoid:
  Anti-, Vaccine, Distribution of 36
  Specimen Examination Chart 57

V

Vaccine, Anti-Typhoid, Distribution of 36
Vats (See Cattle Dipping Vats)
Ventilation, Proper 78
Veterinary Department:
  Dawson, Dr. Chas. F., Chief of Bureau of Veterinary Science, Report of 215
  DeMilly, Dr. J. W., Assistant Veterinarian, Report of 240
  Munsell, Dr. W. A., Assistant Veterinarian, Report of 243
  Organization of 216
Veterinary Inspectors, State 216
Veterinary Medicine, Bureau of 21
Vital Statistics:
  Deaths, Causes:
    Cancer 212
    Diphtheria and Croup 210
    Homicides 213
    Influenza 211
    Malaria 209
    Measles 210
    Pellagra 211
    Pneumonia 212
    Puerperal State 213
    Scarlet Fever 210
    Smallpox 210
    Suicides 213
    Syphilis 212
    Tuberculosis 211
    Typhoid Fever 209
    Whooping Cough 210
    Deaths and Death Rates per 100,000 Population for Municipalities Reporing Deaths for the Years 1915 and 1916, the No. of 208
    Expense of Bureau of 24
    Mortality, 1916 207
    Primary Districts Establishment of 203
    Registrars, Local Appointment of 205
    Report of Dr. F. L. Watkins, Chief of Bureau of Vital Statistics 202
Voorhees, Mrs. Susan, District Public Health Nurse, Report of 145

Page

W

Wassermann:
  Examinations, Comments on Positive Results in............ 15
  Tests Included in Routine Work............................ 48
  Tests, Referring to, Done in Two Laboratories............. 14
  Tests, Relative to Subsequent History of Syphilitics after.... 49
Water:
  Artesian, Flow, Areas of, in Florida (Map).................. 185
  Bacterial Examination of, the Significance of a.............. 192
  Collection of Samples for Examination...................... 192
  Consumed Meterage of.................................... 183
  Consumption of.. 183
  Liquid Chlorine, Apparatus for............................. 190
  Referring to Treatment Plants............................. 190
  Softening of... 182
Water and Sewage:
  Laboratory 191
  Studies to be Carried on by this Laboratory................ 191
Waters, Referring to Sulphur Taste of Some Underground....... 181
Water Supply:
  From Vicksburgian Limestone............................. 179
  Municipal, Derived from Underground Sources............. 180
  Of Florida Municipalities, (Statement).................... 184
Watkins, Dr. F. L., Vital Statistician, State Board of Health, Report of.. 202
Wells, Sewage, Relative to Surveys of......................... 177
Wheeler, Miss Jessie, District Public Health Nurse, Report of... 155
Work, Increased Scope of.................................... 23

Y

Youmans, Dr. Iva C., Bacteriologist, State Board of Health, Report of.. 131
Young, Dr. C. T., Assistant to the State Health Officer, Report of 75